PUBLIC HEALTH

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EDITORIAL

The President-elect

The Council, at their meeting on May 19th, unanimously adopted the recommendation of the Yorkshire Branch that Dr. J. M. Gibson, of Huddersfield, be the President of the Society of Medical Officers of Health for the session 1950–51, and this nomination was unanimously and enthusiastically accepted by the Ordinary Meeting which followed. This Society always likes to recognise in the conferment of the Presidency men who have taken a real part in its work, and no one could be better qualified on this score than Dr. Gibson, who for years past has been Honorary Secretary of the Yorkshire Branch, one of the most important and active in the Society, and has carried out the heavy duties of Chairman of the General Purposes Committee since Dr. (now Sir John) Charles gave up that post in 1944. What is more, Dr. Gibson is a man whose transparent kindliness and good nature go with a clear grasp of the many issues which come before the Society.

Last but not least, the President-elect is an Ulsterman, and it will be a great pleasure to his many fellow-countrymen in the public health service that this honour has gone to one of them. It was pleasant indeed to learn that in the same year, Dr. Gibson's brother has been elected to hold the distinguished position of Moderator of the Presbyterian Church in Ireland.

Sir Wilson and Sir John

The retirement of Sir Wilson Jameson as Chief Medical Officer on reaching his 65th birthday last month marks the end of as strenuous and difficult a decade of office as any man could have undertaken; the fitness and youthfulness of his appearance are a tribute to the sound temperament which has brought him through those critical years without signs of strain. To have been brought straight from the academic calm of the London School of Hygiene and Tropical Medicine to the leadership of the medical and public health services of the country in a war which particularly attacked the civil population, and then to be faced, even as peace approached, with the protracted and sometimes controversial ante-natal care and delivery of the National Health Service, is as trying a test of many qualities as could be devised for any man. Sir Wilson has retained throughout the poise, kindliness and approachability which have marked him as a "big" man and have rightly earned the liking and respect even of those who disagreed with some of the policies with which he has inevitably been associated as a civil servant.

The Council of the Society decided at its May meeting, on the unanimous recommendation of the officers, to recommend to the next general meeting the selection of Sir Wilson as an Honorary Fellow of the Society, a status prescribed by the constitution as for "persons eminently distinguished in the advancement of public health" and by tradition reserved for a select band of medical and lay men. On that occasion there will be opportunities for expressing at greater length than here the regard felt by members of the Society for their former colleague and Chief Medical Officer. (See page 183.)

To Sir John Charles, who is now added to the distinguished succession of Simon, Seaton, Buchanan, Thorne, Power, Newsholme, Newman, MacNalty and Jameson, we offer sincere good wishes for his tenure of office. His quality is well known to members of the Society, particularly in the Northern Branch, the County Borough Group and the Council, where he served with distinction as Chairman of the General Purposes Committee. He has to take on the position of chief medical adviser to the Government at the difficult evolutionary stage of the National Health Service. We know that he has a full comprehension of what organised preventive medicine has done in the past and is capable of doing in the future, and we look to him with confidence.

The Health Congress, Eastbourne

More than one observer at this year's Health Congress, convened by the Royal Sanitary Institute at Eastbourne from April 24th to 28th, sensed that public health and preventive medicine were turning again from the defensive to the offensive, after the rude shocks of the past two years. One encouraging sign was the number of local authorities, over 900, which sent delegates; and never have the elected representatives of the people been given a clearer indication of the dangerous trends which may divorce public health from local government, unless the right type of doctors are given better inducements than at present to enter this branch of medical service.

The President of the Congress (Earl de la Warr) set the tone in his opening address, when he stressed the staggering cost of curative as compared with preventive services, and gave as the supreme instance of topsy-turveydom the "disimprovement" of dental care from the national viewpoint by the virtual wrecking of the school and priority classes' dental service. In the Section of Preventive Medicine particularly, Dr. Andrew Topping drew attention to the financial crux in maintaining the public health service, and Dr. W. G. Clark asked the local authority representatives outright whether they wished to see their health services go over to a regional or other organisation divorced from local government. Drs. D. Reid and G. H. Gibson had opened with two informative addresses on field epidemiology from the statistician's and M.O.H.'s point of view respectively.

In the Conference of Health Visitors, Prof. Alan Moncrieff boldly urged that the hospital almoner should go outside the

hospital to look after the domiciliary needs of out-patients and, although this was said in his presidential address, there were several dissentients in a subsequent discussion to this encroachment into the proper sphere of the health visitor and home nurse. Throughout this conference there was a refreshing return to the concept of home and family environment as the basis of healthy life.

In the Conference of Medical Officers of Health our own President (Dr. Maurice Williams) again put forward some reasoned and constructive criticisms of trends in the National Health Service. In the following discussion, Drs. Stuart Laidlaw and S. C. Gawne gave interesting papers regarding the vast new field of care and after-care of the aged and others, and Sir Allen Daley and others made valuable contributions to the subject.

But it was in the section of Maternal and Child Health that we heard some real "fireworks." Prof. Hilda Lloyd, P.R.C.O.G., in a statesmanlike Presidential Address, underlined the present defects in the maternity services, with especial reference to ante-natal care. Mr. A. W. Purdie, obstetrician and gynaecologist to the North Middlesex Hospital, then gave an opening paper in a general discussion on the Maternity Service, in which after further examining the defects of tripartite structure, of the midwives status—*vis-a-vis* G.P. obstetricians and so on, he suggested that the desirable unity of control should be achieved by handing over domiciliary midwifery to the Regional Boards and Hospital Management Committees with the obstetricians in charge. Dr. J. G. Thwaites and Miss E. K. Bally, having followed with moderate statements of the special interests of general practitioners and midwives in this field, the battle was declared open. A series of speakers rebutted Mr. Purdie's proposals, notably Dr. W. G. Patterson, who said that, as an administrator of hospitals, he had no wish to acquire the problems of domiciliary services, Dr. E. K. Macdonald, who pointed out the great achievements of unified control pre-1948, and Dr. A. C. T. Perkins, who asked Mr. Purdie whether he wished also, in the interest of unity of control, to organise and run classes for making babies' garments and the Home Help Service. Dr. Letitia Fairfield said that Mr. Purdie's scheme meant administrative control not by the "iron hand in the rubber glove" of the obstetrician but by lay secretaries. Mr. Purdie was not abashed, and we should be grateful to him for rubbing into the elected representatives who heard this debate the real danger that the Hospital Service has octopod ambitions. The second sitting of this section produced two valuable and constructive papers by Drs. J. E. Geddes and J. S. G. Burnett on problems in the care and after-care of children exposed to tuberculous infection and a good discussion in a spirit of co-operation between those concerned with the treatment and sociological sides of the anti-tuberculosis campaign.

During the course of the Congress there was a well attended joint meeting of the County Borough and County M.O.H. Groups of the Society, discussing problems of liaison with hospitals and with other local government departments, and another of the County District M.O.H. Group, addressed by Dr. Arnold Brown, of Cheshire, on the relation between county district and county functions.

Altogether this was a most lively and enjoyable Congress which not even the climatic extremes of the week's weather could damp.

Typhoid Conveyed by Corned Beef

The outbreak of typhoid described by Dr. W. B. Moore Medical Officer of Health of the East Berkshire United Sanitary Districts, in the March, 1950, issue of the *Journal of The Royal Sanitary Institute*, had a number of interesting features.

The summer weather of Easter (April 15th to 18th), 1949, probably contributed to Crowthorne, a village in Berkshire, having an unusually large number of visitors, some there for the week-end, others only day trippers. Soon after the holiday many of the inhabitants fell ill. On April 26th two of the villagers were admitted to different hospitals, one suffering from [?] poliomyelitis, the other from fever and delirium. Two more were removed to hospital on the 29th, by which time bacteriological tests had proved that the first two were suffering from typhoid fever. The local doctors on being informed, reported that many of their patients were suffering from persistent headache and pyrexia with abdominal discomfort. By the 30th there were 28 clinically defined cases, the dates of onset of symptoms being between April 21st and 28th. The diagnosis was later confirmed by laboratory findings. Specimens from the other members of the affected households were examined. In the faeces of three typhoid organisms were found.

Enquiries showed that the common factor was either the water supply or the meat from a local butcher's shop. The water was soon exonerated. On the other hand, it was early appreciated that the common factor was not only that all had eaten meat from the butcher's shop but that all had eaten corned beef from that shop.

The names and addresses of all visitors to the infected houses during the Easter week-end were obtained. The medical officers of health of their home towns were contacted and information obtained about them, more particularly about the food they had eaten while at Crowthorne. Of 19 visitors, five succumbed to typhoid fever some days after the return home and two whilst still at Crowthorne. Every one of the sufferers had eaten corned beef. On the other hand, not one of the 12 who remained well had had any. Further evidence incriminating the corned beef was to come. Just as Snow had found that water taken from the Broad Street pump and consumed some miles away caused cholera, so this corned beef, made up in sandwiches and eaten by some who had not been in the village, resulted in infection.

It was, therefore, virtually certain that the corned beef was the cause of the infection. But all measures taken to discover how it was infected failed. There were only four workers in the butcher's shop. All had been well and all tests of blood, urine and faeces were negative, even though repeated many times. The organisms of two known carriers in the village were of different types, as were those of two other carriers who came forward for examination. The man who brought the meat to the shop, and those engaged at the meat distributing depot, were all examined with negative results.

The attack rate was high. Thirteen households were involved; 49 people lived in these; 33, or 67% of them, were attacked. There were 19 visitors to these houses over the week-end. Of these, seven fell ill; the other 12 had not eaten any of the corned beef.

The periods of incubation were on the short side, six being six days and 27 being 9 days or under. On the other hand, one was as long as 21 days.

The patients were admitted to different hospitals. Some at two of these were given chloramphenical (chloromycetin) with apparently satisfactory clinical results. The exhibition of the drug brought about an early relief of symptoms, the fever subsiding within three to five days. On the other hand, it appeared to have no effect on the excretion of *S. typhi.*

The British Medical Guild and the Public Health Service Defence Trust

Members of the Society will have noted, in reports of our Council and Committee meetings, and in the *British Medical Journal* supplement, the progress of consideration as to the part to be played by the public health service in the British Medical Guild. There has been for a long time agreement amongst the members of the Society's Council that the public health service should have a place in and make its contribution to the defensive organisation of the Guild. Indeed, some would say that the public health service is more likely to be in need of assistance from the Guild and its resources than any other branch of the profession.

Tripartite organisation has not been a notable success in other fields of activity, *e.g.*, in Berlin or the National Health Service, so members may be somewhat puzzled to find that it is repeated in the projected set-up of special trust funds for general practitioners, consultants and public health medical officers, each with discretionary powers in allocating monies

to the main British Medical Guild Fund. The reason is a historical and legal one. For many years before the appointed day in 1948, general practitioners with panels under the old National Health Insurance scheme had been contributing to a defence fund. The old general practitioners' fund has continued under new nomenclature, and it was technically necessary, therefore, to set up new similar trusts for consultants and for the public health service, although we should frankly have preferred to see our contributions paid at once into the main Guild Fund. However, a Public Health Service Defence Trust is now being set up, the trustees to be those who also serve as members of the B.M.A.'s Public Health Committee; and the Society hopes that members of the P.H.S. will readily make annual contributions to the Trust Fund on the basis of 2/- per £100 of salary and bonus earned. The actual appeal for support will be sent out shortly from B.M.A. House.

The British Medical Guild itself, which will decide when the backing of the whole profession is to be given in any particular case or cases of need, is setting up area committees, on which we hope public health service representatives will serve.

"Seaman's Home"

"Much remains to be done by all concerned and interested to produce a sanitary environment on many vessels. Not only must adequate facilities be provided by building them into a ship construction or major repair, but, of greater significance, the proper and satisfactory use of the adequate facilities must be obtained. The maritime industry is showing, a greater awareness of the need to provide good and adequate facilities and to begin about their use to the greatest advantage. As the human element is involved, particularly in the satisfactory use of appropriate equipment when it is supplied, accomplishment must depend largely upon education. But through co-operation and education the objectives of the programme will be attained and thereby benefits of a permanent nature will accrue to the vessels of our Merchant Marine."

This is a quotation from the conclusion of a survey of living conditions on American merchant shipping by Graber and Miller, Sanitary Engineers of the U.S. Public Health Service, published in *Public Health Reports* (Washington) for December 30th, 1949. The survey lists the structural and "operational" defects found on various types of cargo vessels, *i.e.*, defects that were built into vessels during their construction and those resulting from imperfect operation and maintenance. Examples of the former are unsatisfactory arrangements for drinking water and washing-up ("absence of multi-vat sink," "no indicative thermometer for rinse water") and lack of adequate rat-proofing. "Operational" defects included uncleanliness, imperfect arrangements for refuse disposal and, again, defective rat-proofing, drinking water supplies,—and a reflection of American enthusiasm for safe food handling—"no signs warning food handlers to wash hands," and "rinse water for utensils not maintained at 170°."

In this country, thanks largely to the persistent efforts of the Association of Sea and Air-Port Health Authorities, the 1937 Board of Trade "Instructions to Surveyors as to Hygiene of Master's and Crew Spaces," brought out for all new ships and for all old ones at every opportunity afforded by the need for major repairs many improvements, notably in ventilation and lighting, in the provision of central heating, drying-rooms, heated washplaces, separate mess-rooms, oilskin lockers, individual metal wardrobes and food-lockers, and proper water-closets. The National Maritime Board Agreement of 1939 between masters and men was designed to help seafarers appreciate the many improvements in their environment, for as the American Report says, the satisfactory use of appropriate equipment when it is supplied must depend largely upon education. Health officers at ports of the United Kingdom have noted of recent years a steady improvement in the standard of living accommodation provided in British merchant vessels and in its use by seafarers, but there remains always the difficulty at paying off ports that the men are too anxious to get ashore, to leave their quarters clean and tidy.

Health in Industry

Both the T.U.C. and the British Employers' Confederation have now given their blessing to a proposal by the Central Council for Health Education that general health education should be carried out in factories and workshops. Both say, however, that their approval applies only to the teaching of how to be healthy, and not to the consideration of working conditions or industrial risks. They feel, too, that methods and means should be arranged locally with the workers' consent, and should not interfere with production.

The C.C.H.E. has accordingly told medical officers of health that the way is officially cleared for them to go ahead in their own localities. C.C.H.E. publications dealing with this topic are "Promoting Industrial Health," "The Health of the Adolescent in Industry" and "Health Education in Industry."

Planning American Medical Care*

Our American cousins are devoting much thought to problems of medical care, and the American Public Health Association has set up a strong sub-committee to consider it under the chairmanship of Dr. Dean Clark, now Administrator of the Massachusetts General Hospital, Boston, and formerly Director of the Health Insurance Plan of Greater New York. They have just issued a "statement," and in circulating it the chairman writes: "Discussion and comments by interested readers are cordially invited." The statement first sets out the "scope and content of an adequate medical care programme" and then discusses in detail the "components of good quality" under the headings of "Professional and Related Personnel," "Hospitals and Related Facilities," "Services," "Financing" and "Administrative Principles." There is a good bibliography, though the references are naturally mainly to American publications.

The British reader, with nearly two years' experience of the National Health Service behind him, will notice that most of the problems with which we have been confronted here are realised in America, and the plan advocated in this statement would avoid some of the weaknesses of our own service. The need for an adequate number of staff is emphasised so that good work can be done, and stress is placed on a proper relationship between rewards, or "compensation," as the Americans say, and the work done. Salaries or capitation methods of payment are advocated rather than a fee for service. It is emphasised that this will ensure that adequate attention is given to prevention. Any split between general practitioner and hospital services is deprecated, and close liaison with the general practitioner and hospital services on the one hand and the public health services on the other, is advocated. The importance of good administration and the training of medical administrators is stressed. Regional planning of hospital services is mentioned, and the value of nurses and medical social workers in a comprehensive medical care scheme underlined. Great stress is properly laid on group practice, and its development in the United States of America as a result of voluntary community care insurance schemes may be more rapid than in this country despite the health centre provisions of the National Health Service Act.

The "statement" is a very valuable document which is well worthy of close study by all, whether in Britain or America, who are interested in the development of medical care schemes.

*The Quality of Medical Care in a National Health Programme. Report of the Sub-committee on Medical Care of the American Public Health Association (page 26) P.O. Box 5998, Bethesda, Maryland, U.S.A. Reprinted from the *American Journal of Public Health*, Vol. **39**, No. 7 (July, 1949).

NURSES AND MIDWIVES WHITLEY COUNCIL

The Joint Public Health and Midwives Standing Committee of the Nurses and Midwives Whitley Council have agreed with the management side on new salary scales for public health nurses and domiciliary nurses and midwives, in the light of the Industrial Court's recent award raising the salaries of non-resident district nurses with district training from a scale of £300-£405 to £340-£465. The grades covered by the new agreement include health and tuberculosis visitors, school nurses and district nurses and midwives. Details will not be available immediately, but the new scales take effect from February 1st, 1949.

SALMONELLOSIS IN MAN AND ANIMALS *

By JOAN TAYLOR, B.SC., M.B., D.P.H.,
Central Public Health Laboratory, Colindale

As a result of the compulsory notification of food poisoning which came into force on January 1st, 1949, there has been a large increase in the number of cases and outbreaks reported. In addition, there has been a great interest on the part of the general public, caterers as well as the medical profession, in the cause of such outbreaks. I have been interested in the picture from the role played by organisms of the Salmonella group and am now convinced that our knowledge of human food poisoning due to Salmonellae can only be increased as our knowledge of reservoirs of infection become known.

Food Poisoning

From 1941 to 1948 the total number of incidents of food poisoning was 3,495, of which 3,193 (91%) were due to Salmonella infections. The figures for 1949 are not yet available, but it seems that though the total number of reported incidents has increased, the percentage due to Salmonella infections has decreased. This does not in any way mean that there has been any decrease in the actual number of Salmonella outbreaks, but that a larger number of outbreaks due to other causes have also been notified.

Types from Man

These figures have been collected from reports sent in to the Salmonella Reference Laboratory from the P.H.L.S. and hospital laboratories, and from the weekly reports of the P.H.L.S.

The types of Salmonella which have been isolated from 1923 to 1949 are shown in Tables I and II. It is obvious that without exception throughout the whole of this period *S. typhi-murium* has been responsible for more incidents than any other member of the Salmonella group. In 1949 this organism was responsible for 75% of human salmonellosis. *S. enteritidis, thompson, newport* together accounted for about 15% of incidents of which *S. thompson* accounted slightly more than either of the other two. *S. dublin* comes next in frequency, accounting for about 1·8%.

TABLE I.
HUMAN SALMONELLOSIS IN ENGLAND AND WALES
1923–47

	1923–39	1940–41	1942–43	1944–45	1946–47
S. typhi-murium	235	112	144	505	1,046
S. enteritidis	54	28	35	90	63
S. thompson	49	50	28	39	66
S. newport	29	19	21	108	39
S. choleraesuis	14	3	4	2	3
S. bovis morbificans	8	3	9	9	11
S. dublin	8	6	4	4	31
Other types	32	25	5	9	19
S. anatum	—	2	6	13	8
S. montevideo	—	2	18	42	29
S. oranienburg	—	—	41	50	27
S. meleagridis	—	—	8	16	3
S. tennessee	—	—	4	6	6
Other types	—	19	41	68	86
Total	429	269	368	961	1,437

Types in Animals

Turning to the animal kingdom, one finds that *S. typhi-murium* has been isolated from a larger variety of animals than any other member of the Salmonella group (see Table III).

It has been isolated from all varieties of poultry. From cows, bullocks, pigs and sheep used for meat, from pet animals—the dog and canary and from vermin, the rat and mouse. *S. enteritidis* has been isolated from poultry and rats. *S. thompson* from poultry and bovines. *S. newport* from pigs and *S. dublin* from bovines and sheep.

These figures are collected from strains sent in to the Salmonella Reference Laboratory for identification. They do not give an accurate picture of salmonellosis in the animal kingdom but they do indicate to a certain extent the type of animal from which strains have been isolated.

TABLE II
HUMAN SALMONELLOSIS IN ENGLAND AND WALES
1948–49

	1948	1949	1948–1949
S. typhi-murium	663	979	1,642
S. enteritidis	43	53	96
S. thompson	57	85	142
S. newport	34	58	92
S. bovis morbificans	14	13	27
S. dublin	22	24	46
Other types	20	15	35
S. anatum	9	9	18
S. montevideo	17	9	26
S. oranienburg	8	11	19
S. meleagridis	1	2	3
S. tennessee	8	2	10
Other types	12	44	56
Total	908	1,304	2,212

TABLE III
SALMONELLOSIS

	Animal strains, 1947–48–49
S. typhi-murium.	Chick, 14. Turkey, 1. Duck, 12. Goose, 3. Bovine, 11. Pig, 4. Lamb, —. Dog, 7. Canary, 1. Rat, 1. Mouse, 2.
S. enteritidis.	Chick, 2. Duck, 1.
S. thompson.	Chick, 27. Duck, 1. Goose, 1. Bovine, 2.
S. newport.	Pig, 3.
S. morbificans.	Chick, 7. Rat, 1.
S. dublin.	Bovine, 167. Lamb, 3.

Other members of the Salmonella have also been isolated from animals (see Table IV). It will be seen that the types which occur less commonly in humans may still be isolated from animals. Again, one finds the *S. typhi-murium* affects animals which were not included in the previous table.

TABLE IV

Lamb.	*Abortus-equi*, 1. *Kentucky*, 1.
Chick.	*Kentucky*, 1. *Meleagridis*, 1. *Concord*, 2.
Turkey.	*Brancaster*, 1.
Silver fox.	*Choleraesuis*, var. *Kunzendorf*, 1.
Bovine.	*Give*, 1. *Brancaster*, 1. *Derby*, 5.
Pig.	*Kentucky*, 1. *Salinatis*, 1. *Anatum*, 1. *Taksony*, 1. *Meleagridis*, 1. *Brancaster*, 1.
Dog.	*Stanley*, 1.
Cat.	*Anatum*, 1. *Montevideo*, 1. *Paratyphi B*, 1.
Foal, penguin, pigeon, *S. typhi-murium*, 1 each.	

Types of Food Involved

On 222 occasions (65%) between 1941–48, meat dishes were thought to be the cause of the food poisoning. Referring again to *S. typhi-murium*, the vehicle was *processed meat*

* Abridgement of address to an Ordinary Meeting of the Society of Medical Officers of Health, April 20th, 1950.

in 21 instances, *duck eggs* in 28 instances, out of a total of 73 incidents due to this organism. Two points may be mentioned here, firstly, that *S. enteritidis* and *S. typhi-murium* cause an infection of the *duck ovary*, which means that egg meat is contaminated. Secondly, that meat dishes are a common vehicle for *S. typhi-murium* infection.

Table V analyses the causative agents in 296 outbreaks.

TABLE V

Type of food	*Type of Food Poisoning*			
	Toxin	*Salmonella*	*Chemical*	*Not proven*
Fresh, pickled, dried and cooked foods (221 outbreaks) ...	70	37	5	109
Canned and bottled foods (75 outbreaks)	45	1	1	28
Total	115	38	6	137

We know comparatively little about the Salmonella *carrier rate in healthy people*. An attempt is being made to collect data, and so far the rate appears to be very low, but any assistance that can be given by medical officers of health will be welcomed. We know something about the periods during which recovered patients continue to excrete Salmonella organisms, a few excrete longer than two weeks after recovery, and a very few may continue to excrete for months or even years.

When attempts are made to find the *source of infection* in cases of human salmonellosis, one finds it impossible in the majority of cases for a variety of reasons. First of all, the food incriminated has usually been thrown away and often the time which has elapsed before a full investigation of patient's environment is undertaken is such that no positive results are obtained. Nevertheless, it is only by careful search of all possible reservoirs that it will be possible to get some idea as to the importance of the different ways in which food and man become infected.

The following are specific instances where there is reasonable evidence that a source was identified :—

Duck egg	Epsom	*S. typhi-murium*
,,	Rotherham	,,
,,	St. Barts.	,,
Milk	Bradford	*S. newport*
,,	Aberdeen	*S. dublin*
Hen	Dr. Blyth Brook	*S. typhi-murium*
Bantam		*S.* ,,
Puppy		*S.* ,,
Cat		*S. concord*
Cockroaches		
Mice		
? Rats		
Human carriers		

DISCUSSION

Dr. W. A. Lethem (Ministry of Food), opening the ensuing discussion, said that they should be grateful to Dr. Taylor for what they had unlearned as well as learned ; for instance, that *S. typhi-murium* was not primarily a cause of disease in mice. Was the name of this type of Salmonella misleading ? He would be grateful for information of any relation between the disease in mice and in cats, which would help to resolve the problem of "mousers" in food premises as potential sources of infection.

Dr. Taylor replied that there had been difficulty in getting random sample mice from rodent officers. Colindale wanted random specimens from normal premises. She doubted whether the cat was very susceptible to Salmonella infection.

Dr. Victor Freeman (Islington), referring to the mention of cockroaches, asked whether the fly was an important element in conveyance. Dr. Taylor's reply was that there had been no recent work on flies in this country, but there had been evidence from the U.S.A. where fly control had resulted in reducing Salmonella and Shigella incidence.

Dr. J. A. Struthers (Holborn) enquired why was the British hen apparently guiltless ? He was still not clear what public health officers should advise about the keeping of cats as mousers on food premises. In reply, Dr. Taylor mentioned the conditions in which American dried egg powder was prepared. The eggs were first transported, still dirty with farmyard debris, for some distance to the plants. In some cases the eggs were washed, in others not. They were then broken by hand on to wire netting. Then the material was spray dried at a temperature not sufficient to kill off organisms. There was, she thought, ample opportunity for the infection of the material before drying. Strains of Salmonella had been isolated from hen faeces. Regarding the cat question, she pointed out that it was much easier to protect food from cats than from rats and mice. Answering a further question from **Dr. J. M. Gibson** (Huddersfield) as to whether the American plants had considered pasteurising the egg material before spray drying, she said that no apparatus suitable for this was available at once, and the egg-drying firms would not get it made unless they knew there would be a long-term demand for dried egg. On a further point regarding duck eggs, she said that these should from the safety point of view be boiled from eight to ten minutes, which would not result in palatability.

Dr. Eric Donaldson (Ministry of Health) asked if rabbits were likely to be a source of infection. Dr. Taylor said that wild rabbits were presumed to be not liable to Salmonella. If the rabbit had been a mode of conveyance many more cases would have been traced to them.

Dr. Leonard Williams (Barking) said that notifications of Salmonella poisoning varied according to the practitioner's interest in the subject. Often, too, the popularity, or otherwise, of the cook in a canteen or catering establishment was a factor in finding the source of an outbreak. In reply, Dr. Taylor suggested that the popularity of the medical officer of health might also have an effect on getting notifications. Salmonella or staphylococcal poisonings were usually mild, but occasionally there was the severe type which might be fatal. There was an urgent need to get all the material they could for bacteriological research. Replying to **Dr. W. G. Booth** (Ealing), she said that optimum conditions for multiplication of Salmonella occurred with processed meat dishes. Duck eggs, too, were guilty in many cases of *S. typhi-murium* as well as *S. enteriditis* infection.

Dr. W. Hartston (Middlesex) suggested that day nurseries might supply the random samples of faeces which Colindale required to help in ascertaining the human carrier risk. Dr. Taylor replied that day nurseries were special communities with unusual risks so would not give fair random samples. What they needed were specimens from women and children living in their own homes, obviously a difficult problem. Answering a further question by Dr. Hartston how infection could get into a shell egg after it had been laid, she said that Scott had shown that this could happen where the shell had been contaminated by wet material in a moist atmosphere. Antibiotics had not, so far as she knew, been considered as a means of sterilising the material for egg drying.

A cordial vote of thanks to Dr. Taylor for her informative opening address, and replies to questions, was moved by Dr. Lethem seconded by Dr. Gibson, and carried by acclamation.

ESTIMATE OF FUTURE BIRTHS

The quarterly estimate of the numbers of live births to be expected in England and Wales as a whole during the six months April-September has been announced* by the Registrar General.

The final estimate for the June quarter is 184,000 and the provisional estimate for the September quarter is 176,000, giving an estimated total of 360,000 babies in the six months.

Last year there were 192,166 live births registered in the June quarter and 183,278 in the September quarter—a total of 375,444.

In the week ended May 6th there were 7,725 live births registered in the Great Towns of England and Wales compared with 7,322 in the previous week. This brought the total in those towns from the beginning of the year to 135,633, compared with 141,581 in the same period last year.

* Weekly Return No. 18, H.M.S.O., price 6d. net (or post free 7d. from P.O. Box 569, London, S.E.1).

SOME MEDICAL ASPECTS OF ATOMIC WARFARE *

By Surgeon-Commander G. D. WEDD, R.N., M.B., B.CH.

The story of Hiroshima and Nagasaki is now ancient history. You all know that the two bombs destroyed all buildings within half a mile and did enormous damage at far greater distances; that about a hundred thousand people were killed and as many more seriously injured by the two explosions.

Of the people who were killed about 80% died through burning or through mechanical injuries due to blast damage, which are the normal accompaniments of an explosion. There remained a smaller number, variously estimated at from 10 to 20%, who were uninjured or only trivially injured at the time but who died days or weeks later from the effects of radioactivity.

Radioactivity, then, is a relatively minor cause of casualties following atomic bombing, and if I pay more attention to it than its importance seems to warrant it is because it is something new and only understood by a few specialists, while I have no reason to suppose that there is anything I can tell you about burns, fractures or lacerations.

Though I cannot claim to be a physicist, it is necessary that I should give you some account of the principles on which the bomb depends so that you may have some idea of what is going on at various stages.

The Atomic Theory

Throughout the nineteenth century chemistry was founded on the classical atomic theory which supposed that atoms are eternal and unchanging and are the ultimate particles of which matter is composed. This theory had enabled chemistry to become an exact science and explained most of the facts then known, but it failed to survive the century.

In 1896 came Becquerel's discovery of radioactivity, shortly followed by Rutherford's proof that certain atoms are constantly changing into other atoms. The classical theory was no longer tenable and its place was taken by the modern theory due to Rutherford and Bohr. In the modern theory atoms are not elementary particles at all but are themselves composed of something smaller. An atom consists of a positively charged nucleus containing nearly all the mass in the whole structure and surrounded by a number of negatively charged electrons which can be pictured as revolving round it rather like the planets round the sun, but held in place by the electrical attraction of opposite charges.

The negatively charged electrons are indeed elementary bodies, so far as we know, but the nucleus has a more complicated structure. It consists of a number of protons equal to the number of outer electrons. The proton carries a positive charge equal to the negative charge on the electron; thus a normal atom is electrically neutral. The number of protons or the number of electrons is called the atomic number of the element. The simplest atom, hydrogen, consists of a single electron revolving round a nucleus, which in this case is a single proton. The diameter of the electron orbit is about ten thousand times the diameter of the nucleus so nearly all matter consists of empty space.

The next simplest atom, helium, has two electrons revolving round a nucleus which contains two protons. If this were all, the atomic weight of helium should be just twice that of hydrogen, or two. In point of fact, the helium atom is four times as heavy as the hydrogen atom so it was necessary to postulate that the nucleus contained, in addition, two uncharged bodies of about the same mass as protons, to which the name neutron was given. The existence of neutrons was abundantly proved later and they form an important ingredient in our story.

Isotopes

All atoms are built up of these three elementary particles. Thus carbon, with atomic number 6 and atomic weight 12, consists of six electrons, six protons and six neutrons. The number of neutrons in an atom is not necessarily constant. There is a rare form of carbon found in nature whose nucleus contains seven neutrons instead of six. Since the nature of an atom depends on the number of protons and electrons the additional neutron does not affect its chemical properties but it does increase its atomic weight to 13. We distinguish between the two by calling the normal form C^{12}, or if we want to indicate the atomic number as well, C_6^{12}, and the rarer form C_6^{13}. Atoms of the same element with different masses due to different numbers of neutrons in the nucleus are known as isotopes. There is more than one isotope of every known element, the record being held by the rare atmospheric gas, xenon, with about twenty, of which ten are stable. The others have been made by artificial means and the number of neutrons differs so much from the optimum that the nuclei are unstable and undergo radioactive decay. Altogether about 850 isotopes of the 96 elements are known, of which some 300 are stable and the rest radioactive.

Radioactivity

All the heaviest atoms, and a few of the lighter ones which occur naturally, are radioactive; that is to say they are continually breaking down, sometimes because they are just too heavy to be stable, sometimes because there is too much disproportion between the protons and neutrons in their nuclei. In the first case a piece of the atom is broken off consisting of two protons and two neutrons—the helium nucleus or alpha particle :—

$$Ra_{88}^{226} \longrightarrow Rn_{86}^{222} + He_2^4$$

It seems that the alpha particle is a very stable configuration which comes away in that form rather than as single protons or neutrons. In the second case, where there are too many neutrons, the atom attempts to achieve stability by changing a neutron into a proton. Since a neutral particle has changed into a positive one a negative electron, called a beta particle, must be given off, while the remaining nucleus, having gained a proton, increases its atomic number by one :—

$$Th_{90}^{234} \longrightarrow Pa_{91}^{234} + e_{-1}^{0}$$

At the same time a gamma ray may or may not be given off.

Particles and Rays

We have, then, three types of radiation which may be given off by disintegrating atoms which we have called alpha and beta particles and gamma rays.

Alpha particles are helium nuclei, four times the mass of hydrogen atoms and having a double positive charge. Their range is short, about one to three inches in air and not more than a two-hundredth of an inch in body tissue.

Beta particles are negatively charged electrons about 1/2,000 of the mass of the hydrogen atom. Their range is somewhat longer than that of alpha particles, about three to ten feet in air and up to half an inch in the tissues.

Gamma rays are of a different nature and consist of radiant energy like light or *x*-rays and travelling at the same speed. Their range is indefinite but very long. In air it is such that, at Hiroshima and Nagasaki, a number of people are said to have been killed by them a mile from the source, and in tissue they are penetrating enough for a proportion of them to pass right through the body and out the other side just like hard *x*-rays from which they differ in no significant respect.

Transformation of Elements

In order to make as good a case as possible for his theory of the particulate nature of atoms themselves, Rutherford wanted to show that it was possible to transform one light nucleus into another. This was just what the alchemists had been trying to do for hundreds of years with no success at all so it was necessary to think of an entirely new method. It seemed likely that the nature of a nucleus might be changed

*An address to Services Hygiene Group, Society of Medical Officers of Health, February 17th, 1950.

if it were hit by a rapidly moving particle such as an alpha particle from radium.

In 1919 Rutherford succeeded in changing a few atoms of nitrogen into an isotope of oxygen by bombarding them with alpha particles. The quantities involved were too small for chemical examination but later work has left no doubt about the change which took place :—

$$N_7^{14} + He_2^4 \longrightarrow O_8^{17} + H_1^1$$

The nitrogen nucleus absorbed the alpha particle and gave off a proton.

That was the first of many experiments which showed that several of the lighter elements could be changed, either by alpha particles, or by protons accelerated by artificial means.

The Neutron

A particularly interesting result was seen when beryllium was bombarded with alpha particles. An unknown particle was given off which caused scientists a lot of trouble for a time but was eventually identified as the neutron which had been postulated many years before to account for the difference between atomic numbers and atomic weights :—

$$Be_4^9 + He_2^4 \longrightarrow C_6^{12} + n_0^1$$

As soon as the neutron had been discovered it was seen that it was a particularly suitable piece of ammunition for further bombardment experiments because, having no electric charge, it can approach nuclei at moderate speeds without being repelled like the charged particles.

Energy Exchanges

When one of these nuclear transformations takes place it is found that the mass of the final products is slightly different from the mass of the reactants. In those cases where mass is lost the final products have velocities representing an enormous amount of energy, thereby providing experimental proof of a prediction made by Einstein in 1905, that energy and matter should be interchangeable and their relation be expressed by the equation :—

$$E = Mc^2$$

where E = energy in ergs, M = mass in grams, and c is a constant equal to the velocity of light in cm. per second., or 30,000,000,000.

It is from this equation that such statements are derived as that there is enough energy in an ounce of coal to drive a ship so many times round the world and so on. Certainly, if we could convert matter into energy to order, the world's fuel problem would be solved for all time, but the snag in the nuclear reactions we have discussed so far is that only about one particle in a hundred thousand produces a transformation and more energy must be expended to make the reaction go than can be obtained from the result.

Neutron Reactions

Neutron reactions of the type $Na_{11}^{23} + n_0^1 \longrightarrow Na_{11}^{24}$ are an exception to the last statement since some of them have a probability approaching 100%, but a large number of charged particles must be used up to produce a neutron in the first place.

Fission

As long as that state of affairs held there was no future for nuclear energy, but a discovery was made in 1939 which changed the whole situation. When a rare isotope of uranium, U^{235}, is bombarded with neutrons it may absorb one of them and immediately become so unstable that the atom splits approximately in half. An enormous amount of energy is released as the two halves fly violently apart, while of equal importance is the fact that two or three neutrons are released at the time to repeat the process. Here is a reaction started by a neutron which releases more neutrons as it proceeds.

The Bomb

It looks as though a lump of U^{235} would explode violently. It does, in fact, constitute a bomb provided it is pure enough and greater than a certain critical size. Size is important because if the lump is too small the surface is increased relative to the volume and too many neutrons will escape. It follows that a lump of U^{235} below the critical size will be safe for an indefinite time but as soon as the critical size is passed it will become a bomb. There is no difficulty about the first neutron to start the reaction because a few atoms are always undergoing fission spontaneously. The problem is to start with a lump of U^{235} small enough to be safe and to increase it above the critical size when it is desired to detonate it. Just how it is done is a close secret but it might be possible to start with two lumps, each below the critical size but together above it, and bring them together by firing an explosive charge behind one of them.

As a bomb material U^{235} is rather old fashioned. A more satisfactory one is the artificial transuranic element plutonium which is made by bombarding the abundant 238 isotope of uranium with neutrols in the atomic pile.

Fission Products

When a uranium or plutonium atom splits it does not always do so in the same way, so the broken bits, which we call fission products, are of different sizes. They include all the elements in the middle of the periodic table from zinc, atomic number 30, to gadolinium, atomic number 64. These fission products are not ordinary atoms of familiar substances but are for the most part unstable isotopes. They are radioactive, giving off beta particles and sometimes gamma rays, with half lives varying from a small fraction of a second to millions of years.

After the bursting of an atomic bomb the greater part of the radioactivity is dissipated in the first few seconds owing to the rapid decay of the shorter lived fission products. As time passes the longer lived, and therefore less active ones, assume a greater relative importance so that it will be many years before the activity ceases entirely. The decay curve for a collection of mixed fission products is hyperbolic in form, falling very rapidly in the early stages and much more slowly later on, which means that, in the event of their being deposited on the ground after a bombardment, anyone who can keep out of the way for the first hour or so will stand a very good chance of survival.

Effects of the Bomb

The bombs used at Hiroshima and Nagasaki were detonated at a height of 2,000 feet or so, which was estimated to be the height at which they would be a maximum amount of material damage in those towns. For a European town the optimum height would probably be rather lower but in either case a dangerous amount of radiation is likely to reach the earth only immediately after the burst. A powerful uprush of air carries the remains of the bomb and its fission products into the upper atmosphere so that they pass out of gamma ray range in about half a minute. Afterwards the fission products find their way into the stratosphere from where they fall out eventually but so long afterwards and so widely dispersed as to be practically harmless.

A ground level burst would not be an economic way of using the bomb but it might occur by accident. In that case everything in the immediate neighbourhood would be pulverised by the blast but the effect would not be so widespread as if the explosion took place higher up. It is likely, however, that some of the fission products would be driven into the ground, where they would remain, as was the case after the experimental bomb at Alamogordo in New Mexico.

The effect of a bomb exploded under water was seen at Bikini. In that case the heat flash and air blast were of little importance but there was an under water blast wave which sank several ships. Of greater importance was the fact that all the fission products were absorbed in the water around the burst and a great deal of it was thrown into the air in the form of spray. This radioactive spray and mist covered an area of several square miles and some of the ships on which

it settled are still radioactive after more than three years; others have been sunk because they were still too hot to be healthy after a year.

If an atom bomb is used again it is most likely to be used to produce blast damage and we must expect the high air burst. The ground burst and under water burst are much less likely, but we must not lose sight of them entirely nor of the possibility that fission products themselves may be sprayed from aircraft for they are a by-product of the atomic pile, and it is necessary to dispose of them somehow.

Radioactive Contamination

Radioactive contamination of the ground following an atom bomb, or the spraying of fission products, is always a possibility and we must be prepared to deal with it. Before salvage operations are allowed in such an area it will be necessary to have the ground surveyed by radiation monitoring parties equipped with various kinds of detecting apparatus.

Effects on the Body

Passing over the effects of the heat flash and the blast wave, let us see what effect the accompanying radioactivity has on the human body. The radiation from the atomic bomb includes alpha and beta particles, *x* and gamma rays, neutrons and, doubtless, others, but for our present purpose we need not worry about the short-range particles and are left with *x* and gamma rays, which for practical purposes are the same thing.

The exact means by which radiations damage the body are not fully understood, but it will be sufficient for our purpose if we say that it is through the formation of ions in the tissues. One of the most characteristic properties of gamma rays is to ionise any atoms near which they pass. If it were not so their presence could not be detected. Since the ionisation of an atom leads to the decomposition of a molecule of which it forms a part we can understand how a gamma ray passing through the body leaves a trail of destruction behind it. The effect is insidious and any change produced may not be noticed for some time.

Firstly, the decomposition of protein molecules in the tissues deprives us of their services and gives rise to a number of breakdown products, some of which are toxic. Thus we can explain the inactivation of enzymes, which has been observed experimentally, and the shock-like symptoms and vomiting which have occurred within an hour or so of heavy irradiation both in human casualties and in experimental animals.

Secondly, there is good experimental evidence that an ionising particle or ray passing through the substance of a chromosome can break it at the point of passage. Such broken chromosomes tend to heal in a short time, but if there are many broken ends in the same place the wrong parts may join up. Naturally, the heavier the irradiation the more broken ends there will be. If a chromosome is broken it appears that the two ends can function quite well unless the cell starts to divide. When division occurs the fragments fail to reach their appointed places. There is a serious disturbance in the chromatin complement of the daughter cells which are usually inviable.

From these considerations certain important consequences emerge.

1. Tissues composed of cells which are actively dividing, such as blood-forming organs, gonads and mucous membrane, are much more radio-sensitive than those whose cells have ceased to divide, such as nerve and muscle.

2. There is usually a "latent" period of some days between the irradiation and the signs of more serious damage. This latent period represents the time taken for the bulk of the damaged cells to divide.

3. A single large dose of radiation is much more dangerous than the same amount spread over a longer time or taken in divided doses. In point of fact, an *x*-ray worker may, during his life, receive without any ill effects at least twice the amount of radiation needed to kill him if he received it in a single dose.

Changes in the Body

The most sensitive tissues in the body are :—

1. Blood forming organs.
2. Gonads.
3. Gastrointestinal epithelium.
4. Skin.
5. Blood vessels.

The symptoms of acute irradiation are very much what one would expect from damage to those organs. The rest of the body is very much less sensitive and is unlikely to be seriously damaged by a sublethal dose.

1. *Haemopoietic System*

The changes in the haemopoietic system include :—

Diminution in numbers of cells.
Diminution of plasma proteins.
Raised sedimentation rate.
Prolonged clotting time.

The cells are diminished in the order lymphocytes, granulocytes, platelets, red cells. The lymphocytes begin to fall within a few hours and reach a minimum in four to five days after which recovery begins, but may not be complete for many months.

As the lymphocytes begin to recover, the granulocytes begin to fall, reaching a minimum in about nine days. Platelets begin to fall from 12 to 15 days and red cells from 17 to 21. The lowest figure for the first three may be about a tenth of the normal value, and for red cells about a fifth. Recovery begins in the same order as the original fall but may not be complete for a year or more.

The sedimentation rate rises after a week, being due, at first, to changes in the plasma proteins and later to the anaemia.

Clotting time is also increased after a week. This is not due so much to diminution of platelets as to the liberation of a heparin like substance. In experimental animals the platelets can be restored by transfusions, but this does not affect the clotting time. On the other hand, the clotting time can be reduced by injecting toluidin blue, which combines with and inactivates heparin.

The symptoms are just as one would expect. In the first four weeks come the leucopenic symptoms, including infections, such as Ludwig's angina and general septicaemia, and ulceration of the mouth as occurs in agranulocytic angina.

Those who survive for a month or so may have anaemia with red counts as low as one million.

From one to five weeks bleeding occurs varying in extent from petechiae to massive haemorrhages from various orifices.

Effects on Gonads

The probability is that the amount of whole body radiation needed to sterilise a man permanently greatly exceeds the lethal dose. For a woman it is probably in the same order as the lethal dose. It seems unlikely, therefore, that a man who survives an atomic explosion will be permanently sterile, though a woman may. In Japan many men within a mile and a half of the bomb suffered from loss of potency and loss of libido, and many women at an even greater distance had amenorrhoea lasting for some months after one normal period. So far as I know, these effects were not permanent and all, both men and women, recovered completely within a year.

Gastrointestinal System

Here the pathological findings are injection, oedema and ulceration of the mucous membrane, more marked in the intestine than the stomach. The symptoms are vomiting on the first day after something like a mid-lethal dose (this must be due to a chemical rather than a cellular change) and later, towards the end of the first week, diarrhoea first watery then bloody.

Skin Changes

Erythema does not occur following whole body gamma irradiation except in the most severe cases, in which survival

is impossible, since the erythema dose is much higher than the lethal dose. When erythema is found after an atomic explosion it is mostly due to burns not to radiation. What was found with great regularity in the Japanese cases was epilation. This followed the pattern of ordinary baldness being most common on the frontal and parietal regions, less so on the temples and occiput and rare on the eyebrows, axillae and pubes. Epilation began in the second week and those cases where it did not occur by the end of three weeks nearly always recovered. The baldness was not permanent, and downy hair nearly always made its appearance within four months.

Fever

Fever cannot be related to any particular system, but it was found with great regularity in severe cases, starting sometimes as early as the first week, sometimes not until the fourth. The temperature sometimes rose above 105° F. (40·5° C.). The earlier the temperature rose the more severe the symptoms and the worse the prognosis.

Cause of Death from Irradiation

Both in human patients and in experimental animals death occurred in a number of peaks, evidently due to different mechanisms.

First at five to 48 hours death resulted from shock-like symptoms, possibly the effects of toxins liberated by tissue breakdown. At the next peak, at about five to 15 days, the terminal stage was probably one of non-specific toxaemia, the toxins being due to tissue breakdown, extravasated blood and infective agents which were allowed to flourish by the disorganisation of the body defences. Finally, death sometimes occurred in the subacute stage, after 30 to 90 days, owing to failure of regeneration of the blood forming organs.

Course of Illness

After heavy irradiation the initial symptoms are nausea, vomiting, diarrhoea, prostration, urination, and lachrymation. The lethal stage may follow immediately but more often the initial symptoms pass off after a few hours and the patient may feel quite well until the onset of the next stage some days or weeks later.

G. V. LeRoy ("Medical Sequaelae of Atomic Bomb Explosion," *Journal American Medical Association*, August, 1947), gives a list of the most important symptoms with time of onset :—

Symptom	*Time of onset*	
	Most severe	*Less severe*
Vomiting	Day of bombing	Day of bombing
Diarrhoea	2 – 7	4 – 35
Fever	2 – 7	14 – 28
Leucopenia	2 – 7	7 – 28
Purpura	4 – 7	14 – 28
Anaemia	–	7 – 35
Epilation	–	7 – 28
Mucous membrane ulceration	–	7 – 28
Death	4 – 10	10 – 90

This table gives a satisfactory picture of the whole course of the illness, and also emphasises the fact that those patients who are likely to recover do not develop severe symptoms for several days.

Treatment

No first-aid treatment is indicated for radiation casualties apart from the other injuries they may have received. In order that they may receive adequate treatment they must be admitted to hospital, which will be made easier by the long latent period before the appearance of the symptoms.

In the event of an atomic attack it is likely that the casualties will number many thousands. This means that if an attempt is made to treat them all they will all be treated inadequately and many lives will be lost which might be saved by a selection of cases.

There will always be a certain number for whom nothing can be done. These should receive no treatment beyond what is necessary for the relief of their symptoms. Likewise, many will be trivially injured and will recover without treatment. The main effort must be directed to those border-line cases who may recover with energetic treatment but not otherwise.

As prognostic indications, I would suggest the following :—

1. Fever beginning in the first four days with a steplike rise of temperature, means a very bad prognosis.
2. A fall in the lymphocyte count below about 200 per cu. mm. on the first day means there is almost no hope of recovery whereas a count above 1,000 after three days probably means that the injury is trivial.
3. Total white count below 800 after ten days means the patient will probably die, but if it is over 1,500 he has a good chance of recovery.
4. Vomiting and bloody diarrhoea in the first week means a bad prognosis.
5. No epilation after three weeks means that the patient will probably recover.

Objects of Treatment

Treatment must be designed with the object of combating the changes which are inevitable after serious damage, particularly—

Shock and general debility.
Diminution of blood cells.
Diminution of blood proteins.
Increased clotting time and multiple haemorrhages.
Damage to gastrointestinal mucosa.
Infection and septicaemia.

General Treatment

1. Complete physical and mental rest. This is necessary in view of Cronkite's finding that anything tending to raise the metabolic rate of mice diminished their chances of recovering from radiation injury. Sedatives and morphine may be necessary.
2. Prevention of chilling for the same reason.
3. Diet should be semi-solid and non-residue on account of the damage to mucous membranes and difficulty in swallowing. Protein should be sufficient to meet basal requirements but excess should be avoided in the early stages owing to its specific dynamic action. Later, as recovery begins, the diet should be high in calories and protein. Liver extract should be useful at this stage.
4. Nursing care to avoid bed sores and other injuries which might act as portals of entry for bacteria.
5. Asepsis when using hypodermic or intravenous needles. Injections should be given as infrequently as possible in order to avoid infection and bleeding.

Specific Treatment

1. Penicillin will be needed to guard against infections. Probably the best way will be to use an oily preparation which retains its activity for two to three days and give an injection of 0·25 to 1 mega unit every other day. Streptomycin or some other antibiotic may be needed in some cases to treat penicillin-resistant organisms but streptomycin should not be used indiscriminately. The newer antibiotics have not been tested up to the present but, being relatively non-toxic and active when given by mouth and against a wide variety of organisms, they should be extremely useful if available.
2. Blood or substitutes. During the anaemic stage whole blood will be needed in amounts of about one to two pints per week according to the extent of the haemorrhage. At the same time dried plasma should be given, as necessary, to correct the low blood protein. Weekly, or more frequent, estimations, should be done on the haemoglobin and plasma protein levels as a check on the treatment. If blood and

plasma are not available in sufficient quantities the best substitute is probably dextran, a polysaccharide which can be prepared in large quantities, keeps indefinitely, and is said to be non-toxic.

3. Toluidin blue, protamine and rutin have all been used to diminish the bleeding tendency. Toluidin blue and protamine act by combining with heparin and have been found to decrease the clotting time in animals. Unfortunately, they were of no value in saving the lives of the animals in question. Rutin has the effect of diminishing capillary permeability. Good effects have been reported from its use in some animals, but only if the administration had started before the radiation. In other experiments it has been of no value whatever.

4. Certain vitamin preparations, particularly pyridoxin and folic acid, are useful for relieving the symptoms after radiotherapy. It appears from animal experiments that they are only likely to assist in saving life if the administration begins before the radiation.

5. Suprarenal cortical extract is also favourably reported as relieving the symptoms after radiotherapy in a high proportion of cases.

Although the above drugs have not helped to save the lives of animals after a lethal dose of radiation, it is still possible that any or all of them may shorten the course of the illness in less severe cases and they should be tried if they are not likely to do harm for other reasons.

Forms of treatment which have not been shown to be useful in practice include vitamin K, pentose nucleotide, leucocyte concentrates and marrow transfusions. Sulphonamides, when given internally, have done nothing but harm, but there is likely to be a place for them in preventing the infection of external wounds.

Long-Term Effects

If a patient makes an apparently complete recovery from a heavy dose of radiation it must not be assumed that he is necessarily safe. New growths in various parts of the body are to be expected after a long interval in a certain number of cases. Such complications have not yet been found in Japanese patients so far as I know, but it will be many years before the danger can be finally assessed.

Chronic Sub-Lethal Radiation

Apart from the immediate acute irradiation from the high air burst, we may have to cope with the more chronic effects on people working in areas which have been contaminated by an under-water explosion or by the dropping of fission products from some such vehicle as a rocket. If such an area were very heavily contaminated it would have to be abandoned, but if the contamination were light and the work important the risk might be accepted. Alternatively, it might not be known that there was any contamination until some damage had been done.

It is generally accepted that a daily whole body exposure to about 0·1 roentgen, will do no harm in an indefinite time. At about two to three times that dose rate a few specially susceptible people might suffer from minor degrees of leucopenia. At dose rates around 5 r. per day more severe leucopenia would be common and probably also some degree of anaemia. Leukaemia would be expected to occur after a considerable interval in a proportion of such subjects.

Skin changes may be expected in the form of atrophy or proliferation after repeated excessive doses but at what level I do not know. That the level is probably high is suggested by American evidence. It was found as a result of a questionary that a large proportion of radiologists of more than five years' standing were found to have changes in their finger ridges, such as atrophy, proliferation and fissures. An attempt to produce similar changes in monkeys was successful but not until about 1,000 r. had been given in divided doses at about 20 r. a sitting.

Changes in the Gonads

In dogs deformed sperms and low sperm counts have been found as a result of repeated irradiation at dose rates below 1 r. per day. However, complete recovery followed the stopping of the exposure. The power of recovery of the testes is very great and sterilisation is unlikely to follow exposure at low dose rates. The ovary has much less power of recovery and it is possible that damage might be done in time at rates not much above the maximum permissible dose rate. In fact it has been suggested that the maximum permissible dose rate should be considerably lower for women.

If the daily rate is raised to somewhere about 25 r. per day we step out of the chronic zone and all the effects of acute irradiation may be expected to occur after about 400 r. to 500 r. have been received.

Genetic Effects

The genetic effects of radiation are expected to take the form of an increase in the normal number of mutations.

Mutations due to some chemical change in a gene or a system of genes occasionally occur spontaneously as when a black or a white rabbit arises from wild stock or when a case of polydactyly or haemophilia suddenly appears in a human family. Few genetic experiments have been done with vertebrates but a great deal of work has been done on invertebrates, particularly the fruit fly, Drosophila. In Drosophila a number of mutations are known to occur with considerable regularity, and it may be said that the chance of a mutation occurring in any particular gene is between one in a hundred thousand and one in a million per generation. This chance can be increased by changes of temperature, by certain chemicals, and, above all, by irradiation. For those organisms which have been extensively studied, the amount of radiation needed to double the number of mutations they produce is about 40 r. to 50 r. or the amount received by a human worker who keeps just within the tolerance dose for two years.

Since nearly all the mutations are subnormal in some respect the conclusions which might be drawn from my remarks so far would be truly alarming if there were not certain redeeming features.

Firstly, many mutations are lethal. This means that if a man receives from 40 r. to 50 r. he may produce an additional small fraction of 1% of infertile sperms. If the whole population receive the same dose the general birth rate may decrease by the same small fraction of 1%.

Secondly, nearly all viable mutations are Mendelian recessives. They will not be noticed in the developing organism except in the extremely unlikely case where both parents receive the same altered gene.

It has been estimated that at the present rate of irradiation of the whole population there may be a serious increase of deleterious mutations in from 20 to 40 generations.

NORTHERN IRELAND MORTALITY FIGURES, 1949

The Registrar General for Northern Ireland has announced the mortality figures for the year 1949, in which three new records were set up. The infant mortality and maternal mortality rates were the lowest ever recorded, as was the death-rate from tuberculosis.

The birth-rate showed a small decrease but was still above the average recorded for the ten years preceding the war. The death-rate, although slightly higher than that for 1948, was lower than that recorded for any earlier year.

The birth-rate in 1949 was 21·4 per thousand of the population, compared with 21·9 in the previous year. The death-rate was 11·5 against 11·2. The infant mortality rate decreased from 46 to 45 per thousand live births. The maternal mortality rate was 1·27 per thousand live births, compared with 1·52 in 1948.

The death-rate from tuberculosis continued to fall and stood at 59 for each 100,000 of the population. This is less than half the tuberculosis mortality of 20 years ago. The death-rate from cancer has risen by 20% in the same period. Last year 24 persons died of cancer for every ten persons who died of tuberculosis. There has, however, been no increase in deaths from cancer in the past seven years.

OUR MEDICAL OFFICERS OF HEALTH

A Study of the Metropolitan Medical Officers of Health, 1855–60

By Students of the History Seminar
at the London School of Hygiene and Tropical Medicine,
1948–49

[In a foreword to a paper which appeared under the same title in PUBLIC HEALTH for August, 1948, it was remarked that the history of our own profession had been neglected. On that occasion the subject under review was the work of the medical officers of health of the large towns in the 'seventies of last century. The study was made by a team of public health students at the London School of Hygiene and Tropical Medicine in 1947/48.

The present paper is the work of a similar team drawn from the D.P.H. Course in the following year. Their chapter is pitched further back in time; it recalls one of the earliest ventures in the development of democratic local government: a social experiment of the first magnitude with a special bearing on public health. We are apt to forget to-day the courage and faith of the men who took part in this experiment. It was their enthusiasm and forbearance that determined the critical issue between the success and failure of our public health service. Certainly, had it failed immediately to attract the right type of medical practitioner to its ranks it would have misfired, at least in its main purpose. That the experiment prospered was in fact due in large measure, as this paper shows, to the loyal support it received from the medical profession.

"Their work continueth . . . Greater than their knowing."

—J. M. M.]

Introduction

It is recorded that when Richard Mead, in 1719, advised the Government on methods to be adopted for the prevention of plague, his was "the first report of epidemiological advice produced by a practitioner at the request of the State."

This was indeed a promising precedent, but development to a stage when medical advice was to become a permanent feature of public administration was slow and fitful and, on the whole, inspired by fear rather than wisdom. Throughout the eighteenth century, and later, the parish vestry or the borough council that sought medical advice did so as a last resort against some exceptional local pestilence. A century elapsed before the Government again found cause in the acuteness of the contemporary problems to repeat the experiment of sounding medical opinion; procuring it on this occasion in the form of evidence before the Select Committees in 1818 and 1819 on "fevers" and the quarantine laws. The next substantial appeal for medical guidance came with the cholera epidemic of 1832, when temporary central and local boards of health, incorporating medical men, were formed to deal with the emergency.

So far, authority had only taken medical advice when the situation had become desperate. It was a singular advance, therefore, when six years later, under no impelling circumstances, the Poor Law Commission, a department of the government, actually engaged three medical men to carry out a sanitary enquiry. The outcome of this novel investigation was the Public Health Act, 1848; but anomalously, the Act made no provision for a medical adviser to the General Board of Health which it created, nor did it offer much inducement to local boards of health to employ one. Despite the lead given in this direction by Liverpool and the City of London, where local initiative had set William Henry Duncan and John Simon off on their beneficent work, there were, at the mid-century, not half a dozen places in the kingdom enjoying the services of a medical officer.

The idea of public health had gained ground, but recognition of the indispensability of sustained medical guidance in relation to sanitary administration had made much less headway.

The Metropolitan Improvement Act

At this critical point in the history of Public Health, Sir Benjamin Hall, during his brief Presidency of the General Board of Health, introduced in the House in 1855 a Bill of great importance. This Bill passed into law as "An Act for the Better Local Management of the Metropolis." It embodied a number of important principles which in the first instance affected only London, but were ultimately applied to sanitary administration over the whole country. Of the principles, only two need concern us here. In the first place it was on the basis of a popular democratic election that each of the new district sanitary authorities for London, designated "Vestries" or "District Boards," was to be established; in the second place, each of the new authorities was to be required to appoint a medical officer to advise on the maintenance of health and the prevention of disease amongst its inhabitants.

Both conceptions were new and sprang from the same democratic spirit which, for the first time, was being brought to bear on questions of local government. Sir Benjamin's elevation to the Presidency had been itself a symptom of the new outlook. As Sir John Simon wrote later: "The personal antecedents of the president were a sort of pledge that the centralising administrative policy of the old Board would no longer be followed."

Politically speaking, the clause making it obligatory for the new authorities to appoint their medical officers was an insignificant one in a Bill that revolutionised London's local government, and in the House it passed without comment. One member took exception to the idea on the grounds that manufacturers and others would be "at the mercy of medical men—perhaps troublesome ones."

The press had plenty to say about the Bill in general, but only two of the more enlightened papers of the period picked on the "Health Officer" clause as meriting a special reference. *The Observer* noted it as "a provision which has afforded to the medical profession and the public much satisfaction." *The Times* used it as an opening for a graceful tribute to John Simon for the sanitary improvement he had brought to the City, and expressed the hope that the appointing of medical officers of to all other parts of London would be no less fruitful.

The only ripple seriously disturbing to the smooth reception of the clause came from the Poor Law medical officers. They had hoped to see the new authorities instructed to appoint them as their medical officers of health. A deputation of Poor Law doctors was received by Sir Benjamin only to be met by his disarming comment that "the great point really is that authorities shall choose men of eminence, and with whom from their station and reputation the medical officers of the Poor Law Unions would feel pleasure in acting."

Wanted—Forty-Eight Medical Officers of Health

With such numbers of strangely new public appointments of a medical character suddenly about to be filled, it was not surprising that in certain circles great interest was aroused. The lay press, the medical profession and the vestry men, who would have the making of the appointments, were all ready to express their views on the duties and terms of appointment and upon how the right men should be chosen.

Apart from *The Lancet*, the medical press had less to say on the subject than might have been expected. But right from the start *The Lancet* believed that its readers should be kept fully informed on these questions and it kept up a keen and running commentary on the business. The *British Medical Journal*, *The Lancet*'s great rival, may for that reason have adopted a contrasting air of aloofness. The *Journal of Public Health and Sanitary Review*—still in the first year of its short career—was no doubt inhibited in its reactions by having a founder-editor, Dr. Benjamin Ward Richardson, who was in the delicate position of being himself a candidate for the medical officership of Chelsea.

In December, 1855, the General Board of Health supplied the new sanitary authorities with "Instructions explanatory of the duties of officers of health." For the proper performance of their many duties it was recommended that they should possess special qualifications in science and, in particular, in pathology, vital statistics, chemistry and natural philosophy. It was suggested, for several good reasons, that the appointments should be whole-time in the sense that the holders should be debarred from private practice but not from holding

other public appointments or from work in a hospital or medical school. "Provided such engagements are not of too engrossing an amount, it will conduce to the efficiency and public estimation of an officer of health that he be thus kept conversant with the practical aspects of his profession, and have given some security for keeping pace with its scientific progress." The Board conclude by urging that the remuneration should be sufficient to enable the officer to dispense with the income derivable from private practice.

Dr. William Farr, of the General Register Office, whose influence was considerable by this date, wrote a letter to the Clerk of the Vestry of St. Marylebone on the importance of the duties of a medical officer of health. He stressed the necessity of choosing a first-class man and the desirability of forming a special committee to make the appointment. *The Lancet* strongly supported this point of view and even invited the medical profession to express their opinion freely regarding the merits of candidates. It advised vestries to avoid mistaking notoriety for reputation and urged them to select men of high professional standing uninfluenced by claims of "neighbourhood, private friendships, or clannish relations."

A letter to *The Lancet* signed "Justitia" repeated this exhortation to choose only the very best men and mentioned the undesirability of combining the appointment with that of the parish poor law surgeon. "Justitia," taking the Editor's invitation at face value, made no bones about publicly recommending that Marylebone should appoint Robert Dundas Thomson, Shoreditch Dr. Barnes, and that Paddington should choose between Handfield-Jones, Graily Hewitt and Burdon Sanderson!

Though one of the strongest supporters of the new sanitary legislation, it is noteworthy that *The Lancet* opposed the principle of whole-time appointments on the grounds that exclusion from public or private practice would make the medical officer a "specialist" and mere "routiner." Nevertheless, vestries were repeatedly warned that adequate remuneration was essential if men of the highest quality were to be obtained and several parishes were severely criticised for advertising for a medical officer at a salary of £100 per annum. It was said that under any such arrangement the Act would confer no benefits.

Views of the Press

The "Instructions" of the General Board of Health were printed in full by most of the leading London daily papers, and several devoted leaders to it. The attitude of *The Times* was plain. John Simon's service to the City was the background against which the Instructions of the Board had been drafted; it was a model from which *The Times* saw no reason to depart. The *Daily Telegraph* speculated on "the wonderful improvement that would result if the medical officers of health carry out all the instructions laid down by the Board." It feared that vestries might not be capable of selecting the best men and thought that the appointments should have been left to the Board of Health. The paper felt that too much stress was laid on "college education, which alone will not produce energy of character, nor will knowledge of science be a substitute for that great desideratum in public appointments, common sense."

Of particular interest was an editorial in the *Morning Advertiser*, an independent popular paper. It anticipated great results from the Act, considering medical officers of health as necessary for the preservation of health, as police officers for the preservation of peace. "Pay your officers well, and let them do nothing else," was its blunt advice to the vestrymen.

But it was not only from the Board and the Press that a vestryman might be drawing advice. "You, Sir," wrote a correspondent to one paper, "if you are not a vestryman, can form no idea of the excitement that prevails among those who seek the honour of being officers of health. Meddling mammas, flirting demure single ladies, young and old bachelors are canvassing for their doctor merely because he doctors them to their satisfaction; so that it is not improbable that a clever man who understands the constitution of the spouse of a vestryman may obtain the appointment."

The Vestries

Most metropolitan vestries accepted their new sanitary responsibilities without much evidence of either enthusiasm or violent opposition.

Exceptions were St. Margarets, Westminster, which petitioned against the Act, and three parishes which sent petitions to support it. The appointment of sanitary officers was made without delay; in most cases the appointment of inspector of nuisances preceding that of the officer of health. The chairman of the Greenwich authority is reported as having said that the appointment of a medical officer of health was the most important feature of the Act; but Greenwich proceeded to advertise the appointment at £150 per annum. Another authority said that "the medical officer of health is a great step in modern civilisation," but a study of vestry records generally gives one the impression that his appointment was made because it was a statutory duty and for no other reason. St. Mary Abbotts presently put forward the motion that vestries should be allowed to appoint a medical officer of health if and when they liked. Another vestry, with an eye to the rates no doubt, declared as early as October, 1857, that the sanitary state had so improved that an M.O.H. was no longer necessary!

In Camberwell and Hackney the vestries heard last-minute motions in favour of dividing the health officer's duties among the Poor Law medical officers in the area. In both places the motions were defeated and single appointments were approved. But special local circumstances led two authorities, Hanover Square Vestry and Poplar, to create dual appointments, and Wandsworth, a large scattered district, split its appointment among three men.

Appointments were made after general advertisement in the press. The questions of salary and full or part-time appointment were discussed vigorously by all vestries. Only in one case was a record found of an advertisement for a medical officer of health in which there was the proviso, "Such officer not to act as a physician or general practitioner"; the salary was to be £200 per annum. This offer was made by the parish of St. George-in-the-East, which, as an enraged correspondent to *The Lancet* wrote, "has elected a surveyor at £250 and a vestry clerk at £400 per annum without any restrictions, also an inspector of nuisances at £150, allowing him to do other work."

In contrast, Lambeth made an appointment of M.O.H. at £400 per annum, a Clerk to the Vestry at £400, a surveyor at £200, and two inspectors of nuisances at £100 each. The advertisement read, "Each of the above officers except the medical officer will have to devote the whole of his time to the duties of the office." Although several vestries saw the desirability of a full-time appointment, almost all agreed that it would not be possible to attract a really good man with the salary they could afford to offer. There is no evidence that any of the first London medical officers of health were, in fact, excluded from private or public practice, whatever the wording of the advertisement. Most salaries lay between £40 and £200 per annum. Three vestries offered £300, and four, St. Pancras, St. Marylebone, Islington and Lambeth, offered £400. The vestry of Lewisham, apparently believing in the greater incentive of piece work, paid their man at the rate of five guineas per report!

These figures might well be compared with the £500 per annum paid by the City to John Simon in 1848. This figure was sufficient to attract a young man of first-class ability and prospects on the threshold of a career in surgery. It is doubtful whether it would have done so had he been fully established in consultant practice.

Whatever view may now be taken of the size of the salaries offered, there was no shortage of applicants for each appointment. From 12 to 30 applications were received by most vestries. The choice of candidate was made most conscientiously and, apart from a decided bias in favour of local men, it seems to have been on merit. A leading article in *The Lancet* of February 16th, 1856, reads: "We observe with satisfaction that the vestries and District Boards are proceeding in an admirable spirit in the election of medical officers of health. Almost everywhere but one feeling exists, that of an honest

determination to secure men of high scientific attainments and of such standing in the profession as will command for them the respect of the public and secure due weight for their recommendations. The vestries have also recognised the importance of having men not only independent in character, but free from the suspicion of local influences. In not a few places a decided preference has been evinced in favour of electing non-residents when their qualifications have been of a superior order."

By and large, the vestrymen deserve all credit for having performed this task so well. But such publicity was given to all appointments, with published lists of candidates and full descriptions of their qualifications and press reports upon the Vestries' proceedings, that any patently unfair decision would have attracted much adverse comment. In general, the appointments were well made, and in October, 1857, *The Lancet* gave thanks to propitious fortune that the medical officers of health of the metropolis were men who did honour to their profession.

The Men Appointed

Examination of the qualifications and standing of the men first appointed medical officers of health to the 48 metropolitan sanitary authorities compels one to the view that *The Lancet's* appraisal of these men was no exaggeration. There were exceptions, of course, particularly in some of the outlying, and at that time, less populous and less important districts, where parochialism favoured the local practitioner. For example, Plumstead peremptorily dismissed the claims of any candidate residing in central London, a vestryman remarking "they come from a distance and make large pretensions." Several other parishes appointed men of mediocre status and ability. But it remains true to say that the majority of vestries, particularly those of importance, selected first-class men.

One is impressed by the youth of most of them. The majority were between 25 and 35 years of age and many were under 30. Among the latter we find men of great ability and promise. Well qualified, many held senior resident or junior honorary appointments at the London hospitals. Some were lecturers in the medical schools. In so far as a parallel may be drawn, these men appear to correspond to some of the more outstanding of the Registrar class to-day. Just such a type was John Simon when he took up his appointment in 1848, and it is likely that vestries were much influenced by so successful a precedent.

Many, particularly the younger men, eventually reached positions of eminence in their profession. John Burden Sanderson (Paddington), distinguished as an epidemiologist and physiologist, became Regius Professor of Medicine at Oxford and was subsequently knighted. Frederick Pavy (St. Luke) won fame as a physician and physiologist. J. S. Bristowe (Camberwell), eminent as a pathologist, became senior physician to St. Thomas' Hospital. George Buchanan (St. Giles), also knighted, was for many years principal medical officer to the Local Government Board. William Odling (Lambeth) made notable contributions to our knowledge of the chemistry of water and the constituents of foodstuffs. Edwin Lancaster (St. James's) gained eminence in many fields of science. At least six of them became Fellows of the Royal Society. It is doubtful whether, in any other group of medical men, so high a proportion have won such distinction.

It is interesting to speculate on the forces which drew these men to Public Health. Probably some were interested in securing an assured income. Small though the salaries were, they were sufficient to be quite useful to young men embarking upon consultant practice. Simon reveals in his "Personal Recollections" how opportune in his case was the new source of income. Prestige was no doubt a factor. Simon had quickly won for himself public esteem such as few medical men had ever before enjoyed, and Sir Benjamin's public reference to the new posts being filled by "men of eminence," made the appointments immediately attractive on that score.

Several had already shown interest in sanitary science. Some had taken part in the cholera investigations carried out after the epidemics of the preceding years. Others had taken an active part in promoting sanitary reform in the parishes in which they lived. At least one, Edwin Lancaster (St. James's, Westminster) had actually been a vestryman. A number could claim authorship of papers and pamphlets bearing on public health.

The evidence of their writings and of the scientific societies to which, according to the entries in the medical directories, so many of them belonged, suggests that the early officers of health were intensely interested in current epidemiological theories. Without exception, they appear to have been sufficiently anti-contagionist in outlook to accept the paramount importance of environmental hygiene in the prevention of zymotic disease. It is difficult to assess from their reports and writings and from vestry minutes the relative value of emotional and intellectual factors in the mental attitude of the medical officers to their work. Some were undoubtedly possessed of a predominantly scientific interest in preventive medicine. But it was a period of our history when men of education and culture, though themselves able to avoid the worst conditions of urban squalor and insanitation, were increasingly moved to try to alleviate the wretched conditions in which so many of the poor lived and died. There is a touch of special pleading in their references to poverty and there are good grounds for the belief that humanitarian feeling was a strong motive for the actions of many of our first medical officers of health.

The Work of the Medical Officer of Health

The Act had prescribed the duties of the medical officer of health in outline. Detailed guidance (undoubtedly based upon the experience of John Simon in the City) was provided by the circular of the General Board of Health. The duties are described under six headings, which may be summarised as follows :—

(1) To possess a detailed knowledge of the natural, social, industrial, and sanitary features of the area.

(2) To collect information from all professional and other persons engaged in the visitation of the poor.

(3) To possess the best possible knowledge of the morbidity and mortality statistics of the area, and the causes which are removable.

(4) To keep the sanitary circumstances of the area under constant supervision with the help of subordinate officers.

(5) To report to their vestry weekly, annually, and at other times on all matters concerning the health of the community.

(6) To attend the local board when required.

Despite this guidance, there was much that the holders of the office could only learn by experience. They had to discover by trial and error how to work with the vestries which employed them. They had to determine what sort of relationship should exist between themselves and their fellow medical officers, other practitioners, central authority, and the public.

The Vestry minutes and reports of the individual medical officers of health indicate that in carrying out their day-to-day duties they followed the circular closely. Considerable similarity exists in all areas in the nature of the work accomplished. This is not surprising since the cleansing of a filthy city, and the provision of the basic sanitary necessities of life were the tasks which monopolised the attention of vestries for some years. Sewers, water supply, paving and the abatement of nuisances and overcrowding were their main concern.

The medical officers of health attacked these problems in a simple and direct way. They determined by inspection the existence of nuisances and collected what vital statistics they could. The latter task was made difficult by the refusal of the vestries or the Government to pay for the publication of any local returns of sickness and death. Edwin Lancaster, speaking of this matter in 1860, mentioned in contrast the success of the Voluntary Sanitary Association in Manchester and Salford in regularly publishing such data. He had been driven to making personal application for vital statistics from the Registrar, the Poor Law medical officers, from hospitals and workhouses. In addition, he received weekly returns from all schools of the number of children kept away from school by illness.

The medical officers reported their observations to the vestries in frequent and somewhat informal letters, and in rather more lengthy annual reports. An early report of Dr. Odlong, of Lambeth, is typical of the strength and power of the writings of these men. The argument is sweetly reasonable but expressed with impassioned eloquence. "For my part I shall never solicit your interference save where your power to interfere is unquestionable, nor advise an expenditure but in cases of demonstrable sanitary necessity. I am not calling upon you for an exercise of charity. . . . I might almost say that an Act of Parliament has been passed for the purpose of enabling them (the poor) to do without charity; and that you are called upon to execute the Act."

Relations with the Vestries

Vestry minutes make only brief reference to their medical officer's work. "A letter from the medical officer of health was read and approved and passed to the Nuisance Committee" is the most frequent reference. Nevertheless, it seems that his recommendations were received sympathetically in Committee and given support. Acknowledgement of this is to be found frequently. The words of Dr. Chalice (Bermondsey) are typical: "A consciousness of this support is most encouraging to me, your officer of health, in performance of duties which are in their exercise frequently of an inquisitorial character, calculated sometimes to give rise to feelings of opposition if not of anger and resentment."

Reference to opposition is found in other reports. Dr. Lord, of Hampstead, wrote of opposition by vested interests to his inspections and prohibitions. Dr. Barclay, of Chelsea, referred of his efforts being considered by some to be the result of misguided zeal. Dr. Conway Evans, of the Strand, complained of the obstruction by owners of warehouses and land adjacent to the Thames to the keeping of such places in a cleanly fashion. Dr. Burdon-Sanderson, of Paddington, had similar difficulty in trying to persuade the Grand Junction Canal Company to improve the canal basin which was in a filthy condition. The company was finally forced by threats of litigation to clean the canal.

The Lancet, in January, 1857, calculated that "on a very moderate computation, the number of nuisances which had been either reformed or altogether removed during the past year amounts to upwards of 15,000." Later in the same year an editorial was devoted entirely to the metropolitan medical officers of health, and gives these details of their work: "Traps have been laid to catch all kinds of stench, and snares set to abate every form of nuisance. Offensive slaughterhouses have been removed, and ruinous tenements, '*Caduci, in caput domini immerentis*,' healthily rebuilt. The milk-can has been robbed of a portion of its water, and the dirty children in the alleys more plentifully supplied. Dustmen have been reluctantly obliged to remove their own dust, and agonised manufacturers compelled to consume their own smoke."

With few exceptions, the relationships between the medical officers and their vestries were excellent. This cordiality did not extend to a more sympathetic reception of their occasional requests for a rise in salary. The few adjustments that were made were not all advances. In many parishes it was the custom for the medical officer to attend meetings and there read his report. In contrast, we find that when Dr. Griffiths applied to the vestry of Clerkenwell for permission to attend, the vestry did not even bother to reply. "Too elaborate" was the Greenwich Vestry's verdict on Dr. Pink's reports, and as for printing them the cost was "to be kept within the corners of a five-pound note."

Probably the best evidence of the happy relationship between the vestries and the first medical officers of health is the fact that, after making allowances for posts made redundant by subsequent amalgamations, all but five appointments were held in 1866 by the same men as in 1856. Of the five officers, three had died, one resigned and one emigrated. Several served their districts for over 30 years, and Dr. J. S. Bristowe died in 1895 after 40 years as medical officer of health for Camberwell. In 1906, when the Society celebrated its 50th anniversary, four of the original members were still alive, including the principal founder, Dr. Pavy, of St. Luke.

The Metropolitan Association of Medical Officers of Health

The early appointed medical officers of health lost no time in forming themselves into a society—the Metropolitan Association of Medical Officers of Health, later to become the Society of Medical Officers of Health. A few interested medical officers met in the house of Dr. Pavy, of St. Luke, in April, 1856, and resolved to convene a meeting of all their fellows in the following month. Thirty attended, and the association was founded as "the gentlemen present were unanimously of opinion that the interests of the public would be promoted if something like a uniform and regular plan of operations were carried out all over the metropolis. Their duties were in many respects uncertain, and ill defined in their nature and extent, and whether for the purpose of getting rid of material causes of disease, or of arriving at broad statistical results, unity was essential."

It is interesting to find that these first medical officers of health, whilst no doubt fully intent on serving their own vestries loyally, realised as soon as they were appointed that the efficient execution of their duties required professional contact, frequent discussion of their problems, and at times concerted action.

All but two of them joined the Society. Dr. Griffiths, of Clerkenwell, appears to have been a somewhat eccentric man and very desirous of going his own way. In spite of several invitations to join, he remained aloof, and was subsequently criticised in an editorial of *The Lancet* for this as well as for certain heretical professional views. In the case of Dr. Letheby, the City's medical officer of health, the reason was probably different. The City was excepted from the area of the Metropolis in the 1855 Act, and had appointed a medical officer of health under an Act of its own seven years earlier. Letheby, presumably, considered that he was not one of the "metropolitan" medical officers for whom the Association was founded.

The care with which they sought to avoid any suggestion of serving the central authority is well shown by something which occurred during the discussion preceding the election of Mr. John Simon to be their chairman. He was by this time Medical Officer to the General Board of Health and concern was felt "lest any of the vestries should suspect anything like a political combination on the part of their medical officers; but it was ultimately agreed that they had nothing to do with Mr. Simon politically but as a man of sanitary science . . ." He was elected unanimously. Again, when a little later Simon conveyed to the Society an invitation from the President of the Board of Health to use a room at the Board's offices as their meeting place, one member stated that "it would be disliked by some of the vestries who had a great dislike of centralisation." In the end, however, this offer was gratefully accepted.

It was decided to elect four standing committees to investigate and report on special problems. Their subjects were:—

(1) Trade nuisances.
(2) Food adulteration.
(3) Aetiology.
(4) Meteorology.

It is unfortunate that there seems to remain no record of the results of these committee's deliberations and findings. It is likely that the Aetiological Committee acted as an intelligence centre for the local prevalence of infectious disease, and served as an example of the usefulness of the exchange of such information.

The Association laid great stress, from the very early days of its existence, on the importance of accurate registration not only of the causes of death, but also of illness. In 1857 the Registrar General supplemented his weekly returns of the causes of death by returns of the incidence of sickness supplied to him by the medical officers of health. This great advance was short lived. In 1858 the Registrar General decided that the sickness returns could no longer be printed. There followed a protracted campaign by the Association to have this decision rescinded, or at least a modified weekly return supplied to them, but the Treasury had the last word, and publication was not resumed.

The Association's records show the degree to which its members were preoccupied with this particular issue. The Book of Minutes contains little information about other activities. An early attempt at health education did not seem to have had great success, for it is recorded in 1857 that tracts on "Vaccination" and on "Our Duty in Relation to Health" sold badly in spite of their reasonable price (three shillings for 100 copies).

In 1859 Dr. Rendle, of St. George-the-Martyr, who resigned his post in protest against his vestry board's apathy, was assured of the Association's sympathy, and invited to remain a member. Meetings of the Association offered a man both formal and informal opportunities for unburdening his mind on matters of doubt and difficulty. Public Health generally owes much to the soundness of the foundations laid by these early medical officers of health for their free and spontaneous association.

Conclusion

A close study of the events leading up to the 1855 Act, and of the early history of the Metropolitan Medical Officers of Health, forces one to the conclusion that the development of public health policy during this important period was influenced decisively by two men, Sir Benjamin Hall and Mr. John Simon.

At a time when the popularity of the General Board of Health was at a low ebb, and the fortunes of sanitary reform along with it, Sir Benjamin Hall introduced, in his Bill, two principles quite absent from the legislation of 1848. Local authorities of democratic constitution were created, not only with duties, but with real power and independence. They were compelled to appoint medical men to advise them on all matters concerning the health of their communities. Local people were thereby enabled to manage and grow enthusiastic about their own affairs; something impossible under a centralised bureaucracy. The sincere belief of Sir Benjamin Hall in local government democracy is borne out by an incident which is described in *The Press* of December 8th, 1855. A deputation of medical men waited on Sir Benjamin for the purpose of learning his intentions when he framed the clause relating to the appointment of medical officers of health. The deputation pressed him to give the vestries some guidance, but Sir Benjamin replied that "he would not feel justified in doing so for the Act was framed entirely upon the principle of local self government. He desired the appointment of men of high position but could not suggest any special course to the vestries."

The other outstanding factor influencing early developments was clearly the personality of John Simon. His good professional status, his intellect and his culture, had secured for him the respect necessary for effective service in the appointment he had held, and probably led others with similar qualities to apply when the other posts were being filled. He had maintained exemplary relations with the Court of Common Council, by whom he was appointed, and with the Commissioners of Sewers to whom he was responsible for the day-to-day sanitary administration of the City.

Towards the end of his tenure of office he had his five annual reports reprinted and published in book form: it must have become the accepted textbook for the early medical officers of health. His appointment, in 1855, to the post of Medical Officer to the Board of Health, brought the Government for the first time a medical advisor who was well versed in public health work in the field. It is likely that the guidance from the Board of Health on the duties and appointment of medical officers of health was acceptable to the vestries because of this. That his own profession regarded him as an outstanding figure is shown by his unanimous election to the Presidency of the newly founded Association of Metropolitan Medical Officers of Health. In this capacity he must have exerted great influence on his recently appointed colleagues during the first critical years of their work.

Acknowledgments

This paper is based upon material derived from the early reports of the Metropolitan Medical Officers of Health, Vestry Minutes, Hansard, and upon newspapers and journals of the period. We are indebted to Mr. G. L. C. Elliston and the Society of Medical Officers of Health for making available the early records of the Association, and to many borough librarians for their great co-operation and help. Finally, we would thank Dr. Ian E. McCracken for his guidance and advice at all stages of the investigation.

SOME OBSERVATIONS ON THE PROBLEM OF THE CEREBRAL PALSIED CHILD *

By C. D. S. AGASSIZ, M.C., M.D., F.R.C.P., D.P.H.

Physician-Superintendent, Queen Mary's Hospital for Children, Carshalton.

I must thank you for doing me the honour of asking me to speak to you on this difficult subject of cerebral palsy, as I am sure that many of you are more experienced than I in the daily handling of these handicapped children. I hope, therefore, that you will make allowances for the fact that I approach the subject from one particular angle.

The Problem

The problem of the cerebral palsied child is one that has been brought more into the daylight in this country only within very recent years, and in particular all honour is due to Mrs. Collis and the London County Council for first setting up a unit of investigation into these cases at Queen Mary's Hospital for Children, Carshalton, some six years ago. Since then general interest in the subject has been aroused and more active steps taken to deal with these children, but these measures are as yet inadequate.

In approaching this problem it seems to me that we have to approach it from two directions. We have first to deal with children of school age or even adults, and work out the best method of treating them, and secondly we have to aim at the diagnosis of the condition in infancy and the prompt treatment then. At present the school age problem is the larger one, but as the early diagnosis is established all our present work at Carshalton points to the conclusion that early diagnosis and treatment will eventually become the major problem and will, we trust, obviate to a considerable extent the necessity of dealing on lines that may be necessary now with the school age child.

I propose to deal first with the problem of early diagnosis and later with the child of school age.

Early Diagnosis

It is commonly asserted that this condition cannot be diagnosed until the child is two years of age, but so far as spastics are concerned, at any rate, I am sure this view is incorrect and in the early diagnosis the mother is our greatest help. Our first enquiries should be as to the confinement, whether it was a difficult labour or not, and particularly whether there is a history of asphyxia livida at birth. Often this cannot be obtained as the mother doesn't know, but if it is obtained it is a pointer of some importance. Further enquiries should be directed as to the development of the baby, and here the mother will be able to give valuable information, as she of all persons is closest in contact with the baby and notices the various stages of development.

In all our enquiries we have to remember the development of the normal baby and that all movements at first are involuntary or reflex and only later are replaced by voluntary movement.

We have also to remember that cerebral palsy is not an orthopaedic condition in its early stages but is a neurological condition in that it is primarily due to damage to the brain, and as a consequence motor paths are interfered with so that normal movement as a result of normal mental and nervous control is not possible.

In consequence of the brain damage it follows that the interference with the nervous mechanism will depend on the extent of the damage—slight damage may result in slight motor difficulties which are possibly not noticed, but more usually

*An Address to the School Health Service Group, Society of Medical Officers of Health.

the damage is such that the motor difficulties are considerable and are not confined to one limb or part of a limb but affect a large portion of the body musculature. For example, we may find that a child with spasticity of arms or legs also dribbles from the mouth or has a squint, showing that though the spasticity of the limb attracts our attention, it is in fact a general affliction of a large part of the body musculature.

I only mention this as it is important that in trying to attempt to diagnose the condition in infancy we must observe all points which may lead us to suspect lack of, or improper action of the body musculature and must bear in mind, particularly in treatment, that it is the nervous mechanism that is at fault and not the muscular system.

What, then, are the signs that the mother may have noticed ?

(1) *Sucking.* Enquiries should be made as to whether the child took the breast properly or not and, if not, what was the reason, *i.e.*, was it the fault of the mother or the child ? In many of these children you will find a history of difficulty of feeding. The child is unable to take the breast because the power of swallowing is not properly controlled. The dribbling from the mouth is not necessarily a sign of idiocy but a sign of inability to swallow adequately. Once the child has been taught to swallow the dribbling will cease.

(2) *Smiling.* Apart from sucking, one of a baby's first actions is to smile, and this should be well developed by two to three months. Where there is interference with the motor paths the child will tend to have a fixed expression and not to smile.

(3) *Voluntary Movements of Limbs.* At four months a normal baby begins to get control of his limbs and will grasp objects held out. At six months the infant will be trying to sit up and, if sat up, will try to stretch out its limbs. In a cerebral palsied child the mother will often tell one that the first thing she noticed about the baby was that the infant did not sit up or attempt to when she expected it. If the child is the second, or subsequent one, she will compare him with her previous children and notices it more quickly. One hears these children described as " stiff babies." The baby lies on its back making very little attempt to move from this position.

At this stage, or a little later, there may be noticed the fact that attempts to feed the child with a spoon are unsuccessful and for this reason such children may be kept on the bottle for many months because it is the only way the child will take food.

All these points are important, and as the child gets older other signs begin to show, such as that the child does not show gradual control of the bladder or bowels when it should —again because of lack of nervous control of the musculature.

In addition to these signs there are a number of reflex actions which can be elicited. For instance, if a normal baby is placed in the prone position it will avert its head, whereas a cerebral palsied child may make no attempt to do so. The grasp reflex remains long after it should have disappeared. During the first three months a baby will reflex by grasping one's finger and be lifted by it, but after that age it will let go if being lifted. A cerebral palsied child can, however, be lifted in this manner long after this age, not because of reflex action, but because he is unable to let go of the finger.

Flexion of the Knees. On lifting a normal baby the knees will flex—in a cerebral palsied child the legs will usually remain straigh .

Abduction of Legs. In a normal baby of six months or more the thighs can be easily abducted but in a cerebral palsied child there may be difficulty in abducting the legs. There are a number of other reflex actions of this type which are at present in a normal baby but absent in a cerebral palsied child, but I trust I have said enough to draw your attention to the importance of them in early diagnosis.

As the child grows these signs of spasticity or athetosis become more evident, and it is then that the disorder is usually diagnosed. By that time, however, the child has developed or is developing other motor paths to activate his muscles but, owing to the absence of the normal stimuli that the baby receives from outside, the movements developed are erratic and inco-ordinated, and the older the child gets the more set these movements become and the more difficult it becomes to develop new motor paths to get more correct movements.

Our object, then, should be to diagnose the condition before wrong motor patterns are set up and so prevent these abnormal movements. If one can set up a good motor pattern from infancy it should eventually develop into an automatic pattern but will want careful watching until that automatic action takes place.

Now with the older children the problem is to substitute a correct motor pattern, but in order to do that one has first got to eliminate the older habit, and obviously the older the child the more difficult this becomes. That, however, is no reason for not trying.

The Spastic Child at School

So far as the child attending school is concerned, the teacher has got to work in harmony with the physiotherapist and modify her methods of teaching to suit the difficulties that the child has in action. It is no use, for instance, trying to teach a child to write with a pen who has difficulty in holding a pen, but such a child may be taught to use a typewriter. Each case is an individual problem and should be treated as such. For this purpose we have found it very desirable to attach teachers, who are to teach the older cerebral palsied children, to the cerebral palsy unit for several months to begin with, so that they can get an idea of what should be done and particularly what should not be done.

It seems to me, therefore, that in tackling this problem we should aim at providing firstly a unit where the children can be treated from as early an age as possible, and to provide physiotherapists and teachers who have been trained in the handling of these children, and who should then be sent to the schools, either special schools for physically handicapped children or ordinary schools. In this way we should get continuity of treatment and supervision and the best results.

This policy is, in fact, about to be adopted in one county and should, I think, be watched with interest. Many schools for cerebral palsied children are being set up, with what results I do not know, but from our own experience I imagine that they may be encountering similar difficulties to those we encountered, and unless experience is pooled it may lead to discouragement in a work which might have been avoided.

Diagnosis

I have referred to the importance of the early diagnosis of cerebral palsy but the diagnosis is not always an easy thing. Our experience has been that many children are referred to us for an opinion who prove to be mentally deficient, with some motor disability, or cases of motor disability from other causes such as amyotonia congenita. Recently I saw a boy who was thought to be a case of cerebral palsy but who was, in fact, a muscular dystrophy.

Because of this difficulty, but more particularly because of the difficulty of assessing the mental condition in a case of cerebral palsy, especially in a baby, we always admit our children for a probationary period of up to three months. In a baby who cannot move or speak, or an older child whose movements are limited or speech defective, it is impossible to assess the mental capacity at a single interview as a rule. I am often asked : Do we test the I.Q. of these children ? We do not, because we do not think it can be done as for ordinary children, but many of these children prove to be highly intelligent and when they go to school after treatment, if able to go to an ordinary school, hold their own with the other children and even head their class. The habit of concentration they acquire in learning to overcome their physical disability enables them to concentrate more thoroughly in their lessons.

Principles of Treatment

Now with regard to treatment, may I offer a few observations ? I do not propose to deal with methods of treatment but with principles. We find so often that we are asked by physiotherapists to give a précis of treatment for the cerebral palsied child—how do we teach a child to walk or to do certain actions. The answer invariably is that we don't try. You do not teach a baby to walk or stand, the baby learns of itself,

but the parent can help it to do so. Once the child knows how to use its arm or leg muscles it will try to walk itself, and so it is with the cerebral palsied child, and every child has to be treated as an individual problem and has to learn by repetition of movements, and from receipt of outside stimuli and stimuli from within, how to use its muscles to produce a given action. The cerebral palsied baby, owing to its inability to move, lies on its back and so long as it lies there will receive very little outside stimuli. If it is sat up in a chair in a proper position, the child's whole visual and mental outlook is enlarged, and with these added and changing stimuli, it will have a completely different mental picture of the world around it and will react to it.

No amount of massage or electrical treatment is going to produce any effect on a condition which is primarily neurological and they may do a great deal of harm. Nor is active movement of the muscles advisable until the child has learned from passive or reflex movements the correct mental pattern for active movement.

If we bear these principles in mind we will in the end avoid much disappointment from lack of success in treatment and obtain better results.

We must realise, too, that the treatment of the spastic and the athetoid must be suited to these particular forms of cerebral palsy. In the spastic it is useless to try to treat the child to relax, whereas in the athetoid it is important that the child should be taught relaxation before going on to passive movements.

I may refer here in passing to the use of splints and appliances. In America I understand these are largely used for a time to give the child stability, so that he can perform the movement desired. Perhaps in some children they may be of service, but our experience with babies leads us to believe that satisfactory results can be obtained without them. In using the term appliance, I am of course referring to such appliances as calipers and not to special pieces of furniture, or to skis which we use largely.

It has been suggested to me that difficulty is experienced by some of you as to whether surgical interference should be advised or not. If we bear in mind the view that I have tried to put before you as to the cause, it would appear that to suggest surgical interference is hardly sound. But where a case has been allowed to get to the stage of actual contracture, and consequent deformity, surgical interference may be called for. I have not a large experience of such cases but those I have seen have not impressed me.

OBITUARY

Edward William Hope, O.B.E., M.D., D.Sc. (P.H.)

The death on April 27th, in his 95th year, of Prof. E. W. Hope, Medical Officer of Health for Liverpool for the 30 years 1894–1924, has taken away the senior surviving Past-President of the Society since the death of Dr. W. G. Willoughby. Prof. Hope held that office for the session 1912–13, when he had already occupied the chief post at Liverpool for 18 years. His Presidential Address, entitled "The Expanding Scope of Sanitary Administration," was described by the then Editor of *Public Health* as "impressive by its broadness of view and wealth of suggestiveness" and as a natural complement to the address of his predecessor, Prof. Bostock Hill, whose subject had been "Evolution of the Medical Officer of Health." Hope's address still reads well and has a surprisingly modern outlook, even discussing eugenics.

He was born in 1856 (the year of the foundation of the original Metropolitan Association of M.O.H.s) and graduated M.B., C.M. from Edinburgh University in 1878, proceeding M.D. in 1881 and D.Sc. in public health in 1887. He joined the Liverpool staff under Dr. Stopford Taylor in 1883, and had early experience of the anxieties of a great port when an infected ship arrived from Hamburg, where cholera was raging at the time. He gained valuable experience as medical superintendent of Park Hill Fever Hospital from 1887, until in 1894 he succeeded Dr. Taylor as M.O.H. of the City and Port, being the third in succession from Dr. W. H. Duncan, the first M.O.H. of Liverpool and of the world. At that period Hope was still faced with many of the problems which had been tackled by Duncan and his contemporaries, for with the enormous growth of Liverpool's population during the nineteenth century there were still 24,000 cellars in use as dwellings when he first arrived in Liverpool in 1883, and slum property abounded; during his M.O.H.ship he obtained demolition of 12,000 unfit dwellings and in the sanitation of housing he had an unequalled reputation. Where he differed from the pioneers was, first, in the new science of epidemiology and, secondly, in his initiation of personal health services. Regarding the mode of spread of infections he had a famous battle early in the 1900s against the official views of the Local Government Board about aerial convection of smallpox, and he did good work in the eradication of typhus and typhoid. He was one of the first of his generation to obtain the appointment of health visitors (1897), and to open a milk depot and child welfare clnics. Later came the development of the tuberculosis, school medical, and venereal disease services.

He was lecturer in public health in the University College of Liverpool from 1886, became professor when the college affiliated with Victoria University and continued when Liverpool University was given its charter in 1903. The Liverpool School of Hygiene, which he organised, trained many hundreds of health visitors and sanitary inspectors. His "Textbook of Public Health" has continued through many editions, first as "Hope and Stallybrass" and latterly as "Frazer and Stallybrass," and his book "Health at the Gateway," published on his retirement in 1924, gave the fruit of his experiences as a port medical officer. With the late Dr. W. Hanna and Dr. Stallybrass he also produced a textbook of industrial hygiene.

Prof. Hope was highly esteemed by the medical profession of Liverpool and by his colleagues of the North-Western Branch of the Society. By a serious oversight he continued to pay his annual subscription for many years after retirement, and it was only after the recent war that this was noticed and he was elected a fully-paid Life Fellow after some 50 years of membership, an occurrence which drew a delightfully sprightly acknowledgment from him.

We extend our sympathy to his widow, son and two daughters.

Henry Hyslop Thomson, M.D. (Glas.), D.P.H.

We record with regret the death on May 2nd, at the house of his retirement at Helensburgh, of Dr. H. Hyslop Thomson, County Medical Officer of Health of Hertfordshire from 1916 to 1940. He was born at Campbeltown in 1874 and graduated M.B., C.M. at Glasgow University in 1896, proceeding M.D. in 1898. He took the D.P.H., Liverpool, in 1912. After a short period of hospital and private practice he was appointed medical superintendent of Quarriers' Homes, Bridge of Weir, and of the sanatorium in connection with these homes. Later he became medical superintendent of Liverpool Sanatorium and tuberculosis officer for Newport and East Monmouthshire, and after some years in these positions was appointed, in 1913, Tuberculosis Officer, and in 1916, Medical Officer of Health for Hertfordshire and County Tuberculosis Officer. He had been acting M.O.H. for two years when his predecessor, Col. (later Sir) Francis Fremantle, had been mobilised for military service. He retired on attaining the age limit in 1940.

Dr. Thomson was the author of "The Principles and Practice of Preventive Medicine" and "Tuberculosis and National Health" and other books. He leaves a widow and two daughters, to whom we extend our sympathy. He joined the Society in 1913 and was for many years an active member of the Home Counties Branch and of the Association of County Medical Officers.

As we go to press we learn with regret of the deaths of Dr. T. R. Elliott, chest physician, Shropshire, and of Dr. B. A. Peters, formerly medical superintendent of the Bristol City Fever Hospital and Sanatorium. Obituary notices will appear in our next issue.

CORRESPONDENCE

Social-Medical Investigations

To the Editor of Public Health

Sir,—At the recent Congress of the Royal Sanitary Institute, Professor James Mackintosh was good enough to refer to certain possible lines of research I have outlined elsewhere, and which seem to me to offer fruitful fields for the medical officer of health who is interested in enlarging the base on which a great deal of preventive medicine is built.

I am indebted to Professor Mackintosh, not only for his mention of my intentions at the Eastbourne Congress, but also for a suggestion he made a short time ago in the course of a discussion we had on the means of harnessing the resources of local health departments to research and survey work. In effect, the suggestion he made was that many medical officers of health of county districts, and perhaps of some county boroughs at present unassociated with university departments of preventive medicine, might welcome an opportunity of participating in schemes of research under the co-ordination of a university department.

I believe—and I think my experience of surveys and field work during the period I acted as M.O.H. of the Borough of Luton entitles me to say this—I believe that the M.O.H. has opportunities in some fields of research work not available to anyone else. And I believe also that it is still a fundamental obligation of the M.O.H. to use these opportunities as far as practicable. I find myself in agreement with Dr. Fraser Brockington, who has given concrete form to his ideas in the West Riding of Yorkshire, that the district M.O., or at all events the M.O.Hs. of areas with populations lying between 50,000 and 120,000 or so, are usually in the best position to undertake both "executive social medicine" and primary researches in epidemiology (using the expression to mean what are now often called social-medical investigations).

During the last few months I have been taking steps to find ways and means of organising researches in a number of areas somewhat along the lines of the Luton Pilot Surveys of which, I dare say, readers are aware. The need for repeating surveys of the kind undertaken in Luton in a number of areas selected for their diversity is self-evident; and the advantages which would accrue from adopting a uniform pattern in all the areas to ensure comparability hardly needs stressing.

I am not yet in a position to say how the projects I have in mind will be organised, but at this stage I seek the publicity of your columns to solicit the views of my colleagues in public health on a number of points: (1) Are M.O.Hs. not already engaged in organised research work eager to join in these activities? (2) Would they—unless, of course, they already have associations with a university department—care for such an association? (3) Would an invitation to a number of M.O.Hs. to join me in discussion either in Cardiff or in London be welcome? (4) And if in Cardiff, would there be less difficulty so far as leave of absence and expenses are concerned if the discussions were to be part of a post-graduate course? Whatever the answer to these questions, I hope in the near future to get in touch with a number of M.O.Hs., but I should be greatly helped by expressions of opinion either in these columns or in communications addressed to me personally.

Yours faithfully,

F. Grundy,
Mansel Talbot Professor of Preventive Medicine.

Department of Preventive Medicine,
Welsh National School of Medicine,
The Parade,
Cardiff.
May 18th, 1950.

SUPERVISION OF PASTEURISING PROCESSES UNDER THE MILK REGULATIONS, 1949

The Association of County Medical Officers and the Association of County Sanitary Officers have given much thought to the effect of the new Milk (Special Designations) (Pasteurised and Sterilised Milk), Regulations, 1949, and the Joint Committee of the two Associations, under the chairmanship of Sir Allen Daley, has recently organised a refresher course on the whole subject for County Medical Officers and County Sanitary Officers. This took place at the Hastings Hall, B.M.A. House, in London on March 22nd, 23rd and 24th, and comprised visits to various dairies in the London area and addresses by guest speakers, concluding with a general discussion opened by Dr. G. Ramage (County Medical Officer, Staffordshire) and Mr. F. H. Leggat (County Sanitary Officer, Warwickshire). The speakers included Prof. Wilson, of the Medical Research Council; Dr. McCoy, of the Cambridge Laboratory; Mr. P. O'Neill, the Secretary of the National Dairymen's Association; and that Association's immediate past President, Mr. Gingell; together with Mr. Cuttell, of the Aluminium Plant and Vessel Co., and Mr. Burley, of Messrs. Cherry Burrell.

The course had some very interesting features, and in his concluding address Sir Allen Daley referred particularly to the benefits which had been, and which he hoped would continue to be, derived by the very close association existing between the two Associations.

Delegates were unanimous in their view that the whole subject required the closest co-operation between the officials, the dairying industry itself, and the manufacturers of pasteurising equipment and the course was notable for the very friendly spirit which existed between these various interests and the manner in which attempts were made to reconcile inevitable differences of view. The dairyman has his difficulties, not the least of which is the desire to preserve the cream line on his milk; and he is, therefore, anxious that licensing authorities' requirements as to temperature for treatment of milk should be such as will preserve this cream line. The officials, on the other hand, must be certain that pasteurisation is efficient and delegates were impressed with Prof. Wilson's reference to the narrow margin of safety which is involved in the modern requirements for H.T.S.T. pasteurisation of milk. It was clear to all that with such a narrow margin the supervision of the plants must be of the highest order. Prof. Wilson said we are living in an age in which we are dependent for our daily needs upon technical experts, and processing of milk is an example where the expert plays a great part in determining the final safety. The battle for pasteurisation is won and the need now is to raise and control this process at a high standard of efficiency.

Dr. Ramage (County M.O.H., Staffordshire), in opening the final discussion, wondered whether, in view of what had been said of pasteurised milk, sufficient prominence had been given to sterilisation of milk as the real safety measure. Many speakers endorsed this view, and the general feeling of delegates was that much more would be heard of this in the future.

As a result of the course, the Joint Committee of the Association of County Medical Officers and of the Association of County Sanitary Officers has been asked to consider all the views expressed and to draw up a memorandum of guidance for their members. The aim of such a memorandum would be to secure a reasonably uniform administration. This was agreed by all at the course to be in the interests of the officers, the industry and the manufacturers.

NATIONAL FOOT HEALTH WEEK

On Monday, June 12th, at 2.30 p.m., Sir William Jameson is to open at the Central Hall, Westminster, an Exhibition organised by the Foot Health Educational Bureau. This is designed to show to the public the importance of the care of the foot and the ways in which the proper fitting of footwear can affect general well-being. During the four days of the Exhibition there will be daily meetings at which medical and other speakers will discuss relevant questions. The programme is: Monday, 12th, at 3.45 p.m., Dr. Margaret Emslie on "The Foot in the Nursery"; Tuesday, 13th, at 11 a.m., Miss Greenhill (Sister-in-Charge, Medical Rehabilitation Centre, Royal Free Hospital) on "Foot Care for the Adolescent," and at 2.30 p.m. open forum on "The Adult Foot," speakers including Dr. E. L. Sturdee (Ministry of Health), Dr. Irene Green (Norfolk) and Mr. H. E. Walker, F.C.H.S. (Superintendent, London Foot Hospital). On Wednesday, 14th, at 11 a.m., Miss M. S. S. Chamberlain (Ling Physical Education Association) on "The School Child's Foot"; at 2.30 p.m., Mr. T. T. Stamm, F.R.C.S. (Guy's Hospital), on "The Mature Foot," and at 3.45 p.m. a meeting organised for medical practitioners by our M. & C.W. Group, when Mr. Denis Browne, F.R.C.S. (Children's Hospital, Great Ormond Street), will speak on "The Management and Prevention of Foot Defects in Children" (see page 183). On Thursday, 15th, at 11 a.m., Dr. Ann Mower White (A.D.M.O., L.C.C.) will give an address on "On Your Toes," and at 2.30 p.m. Dr. John Maddison (M.O.H., Twickenham) will be amongst several speakers in open forum on "Foot Health in Childhood." Shoe fitting demonstrations will be given each morning and afternoon.

SOCIETY OF MEDICAL OFFICERS OF HEALTH

NOTICES

ORDINARY MEETING

Notice is hereby given that an Ordinary Meeting of the Society will be held at the Polygon Hotel, Southampton, after the Loyal Toast on the occasion of the dinner to be given by the Southern Branch to the Council of the Society on Friday, July 7th, 1950.

AGENDA

1. Minutes.
2. Correspondence.
3. To elect, on the nomination of the Council in accordance with Article 9, the following as an Honorary Fellow of the Society:—

Sir Wilson Jameson, G.B.E., K.C.B., M.A., M.D. (ABERD.), F.R.C.P. (LOND.), F.R.C.O.G., LL.D. (ABERD.), D.P.H., formerly Chief Medical Officer, Ministries of Health and Education, and Professor of Public Health, University of London, of 8, Fordington Road, Highgate, London, N.6.

By Order,
G. L. C. ELLISTON,
Executive Secretary.

Tavistock House,
London, W.C.1.
June 6th, 1950.

MATERNITY AND CHILD WELFARE GROUP

President: Dr. J. D. KERSHAW.

Meeting during National Foot Health Week

By courtesy of the Foot Health Educational Bureau, the Group is arranging a meeting and discussion to be restricted to members of the Society of Medical Officers of Health, and to be held at the Central Hall, Westminster, on Wednesday, June 14th, during the course of the National Foot Health Exhibition. This meeting will follow the public lecture to be given at 2.30 p.m. that day by Mr. Stamm, F.R.C.S., of Guy's Hospital. The Group's meeting will commence at approximately 3.45 p.m., and the opening speaker will be Mr. Denis Browne, F.R.C.S., Surgeon to the Hospital for Sick Children, Great Ormond Street, who will speak on "The Management and Prevention of Foot Defects in Children." The M. & C.W. Group extend a warm invitation to other members of the Society who are interested to attend on this occasion. A shoe fitting demonstration, also restricted to medical practitioners, will follow this meeting.

Post-Graduate Refresher Course, London, Saturday and Sunday, July 1st and 2nd, 1950

PROGRAMME

SATURDAY, JULY 1ST

Clinical meeting at Queen Elizabeth Hospital for Children, Hackney Road, London, E.

Morning—10.30 a.m., Demonstration of clinical cases; 12.30 p.m., Talk on "Primary Tuberculosis" by Dr. Jacoby.

Afternoon—Talk by Dr. Alexander Russell on "Malnutrition and its Endocrine Background"; Talk by Dr. Helen Mackay.

SUNDAY, JULY 2ND

At B.M.A. House, Tavistock Square, London, W.C.1. Programme on "Health Education in Relation to Maternity and Child Welfare," arranged by Dr. Robert Sutherland, of the Central Council for Health Education.

10 a.m., Talk by Dr. Burton or Dr. Burgess, followed by discussion, 11 a.m., Break; 11.15 a.m., "Exhibitions. Lecturer: Mr. G. W. Grosse, Exhibition Officer, C.C.H.E.; 11.30 a.m., "Teaching Technique" for small groups (with demonstrations). Lecturer: Mr. C. A. P. Noseworthy, Education Officer, C.C.H.E., followed by discussion.

This course will follow the annual conference of the National Association for Maternity and Child Welfare. Registration fee 10/6.

Further details, together with application forms, will be circulated later.

The Chief Medical Officer of the Ministry of Health has been informed of the details of the course, and states that a local health authority sending to this course any of their medical officers whose duties include maternity and child welfare might properly include expenditure incurred in this way in their grant claim, subject to the usual conditions.

26, Langside Crescent,
Southgate, London, N.14.

KATHLEEN M. HART,
Hon. Secretary.

24b, Roxborough Park,
Harrow-on-the-Hill, Middlesex.

MABEL DODDS.
Hon. Asst. Secretary.

May 15th, 1950.

REPORTS

ORDINARY MEETING

An Ordinary Meeting of the Society was held in the Hastings Hall, Tavistock House, London, W.C.1, on Friday, April 20th, 1950, at 5.30 p.m. The President (Dr. H. C. Maurice Williams) was in the chair and some 50 members were in attendance.

Sir Allen Daley sent an apology for inability to attend.

The following were elected to fully paid Life Membership on the recommendation of the Council and the North-Western Branch:—

Dr. F. T. H. Wood (formerly M.O.H., Bootle C.B.); joined Society 1919. President 1939-41.

Dr. R. W. Macpherson (formerly M.O.H., Workington M.B.); joined Society 1920.

The meeting then proceeded to the election of the following as Fellows:—

Barker, Rosetta C., M.B., B.CH., B.A.O., D.P.H.; Bennie, Thomas Yellowlees. M.B., CH.B. (GLASG.), D.P.H.; Brade-Birks, Hilda Kathleen, M.B., CH.B. (MANCH.), D.P.H.; Bradley, William Henry, D.M. (OXON), M.R.C.P.; Brindle, Thomas Wynne, M.B., CH.B. (MANCH.), D.P.H.; Budding, Mary Elmed, M.B., B.CH., B.SC. (WALES), D.P.H.; Burn, Alan Telford, M.B. (DURH.), B.S., D.P.H.; Burns, Phoebe Stanton, M.B., B.CH., B.A.O., D.P.H.; Collins, Williams Cornelius, B.SC., M.B. (IRE.), D.P.H.; Copeland, Winifred Mary, M.B. (BELF.), D.P.H.; Domenet, Jacqueline. M.B., CH.B. (BIRM.); Elwood, Willis John, M.B. (BELF.), D.P.H.; Evans, Constance M. Stenner, B.SC., M.R.C.S., L.R.C.P.; Evans, Hannah Patricia, M.B., B.CH (WA.), B.SC.; Falkman, Sebastian, L.R.C.P. & S. (EDIN.), L.R.F.P.S. (GLAS.), D.R.C.O.G., D.P.H.; Gaffney, Margaret Mary, M.B., CH.B. (IRE.); Gillatt, Margaret Steedman, M.B., CH.B. (EDIN.); Gilmour, William, M.D., CH.B. (GLASG.), D.P.H.; Griffiths, Phyllis, M.R.C.S., L.R.C.P., D.P.H.; Heller, Margaret, M.D. (VIENNA), L.R.C.P. & S. (EDIN.); Hoey, Richard Ayrton, M.R.C.S., L.R.C.P., D.P.H.; Hunter, Colin Graeme, M.B., CH.B. (N.Z.), M.R.C.P., D.P.H.; Jamison, Cecil Edward, B.A., M.B., B.A.O., D.P.H.; Jones, Kathleen E. J., M.R.C.S., L.R.C.P.; Kalra, Atam P., M.B., B.S. (LOND.), M.R.C.S., L.R.C.P., D.P.H. D.C.H.; Lawson, George Trevor Nevin, M.B., B.CH. (BELF.), D.P.H.

Lumley, Air Comm. Eric Alfred, R.A.F. (ret.), C.B.E., M.C., M.D. (DUB.), B.CH., D.P.H., D.T.M. & H.; Mackay, Roderick, M.D. (ABERD.), D.P.H.; McKendrick, William, M.D. (GLASG.), D.P.H.; McLeish, Alastair Campbell, M.A., M.B., B.S. (LOND.), D.P.H.; Margetts, Albert Roy Childs, M.B., B.S. (LOND.), D.P.H.; Markham, Robert William M.B., B.CH. (CAMB.), D.P.H.; Mayers, James Reuben, M.B., B.S. (LOND.), D.P.H.; Mitchell, James John, M.B. (GLASG.), CH.B.; Moss-Morris, Sheila Beryl, M.B., B.CH. (WITS.), D.C.H.; Nelson, Ivan D. M., M.B. (BELF.), B.CH., D.P.H.; Norbury, John Henry Frederick, M.B., B.S. (LOND.), D.P.H.; Ore, Sheila M., M.B., CH.B. (ST. AND.); Payton, Carrick Gordon, M.D. (BIRM.), CH.B. D.P.H.; Polson, James St. C., M.B. (GLASG.), CH.B., D.P.H.; Preston, Jean Elizabeth, M.B. (GLASG.), CH.B.; Timpany, Margaret M., M.B. (EDIN.), CH.B., D.P.H.; Warwick, Elspeth M., M.B. (EDIN.), D.P.H.; Watson, John Charles, B.A., M.B. (DUB.), B.CH., D.P.H.; White, Joyce E. M., M.R.C.S., L.R.C.P.; Williams, Gwendoline, M.B. (LIV.), CH.B., D.P.H.; Williams, Llary Mair, M.B. (WA.), B.CH., D.P.H., D.C.H.; Will, Margaret O., M.B. (ABERD.), D.P.H.; Wilson, William Donald, M.D. (ABERD.), D.P.H.; Wright, Anne Hourston, M.B., CH.B.

Several nominations for the next ensuing election were reported.

A discussion on "Salmonella Infection in Human and Animals" was then opened by Dr. Joan Taylor, of the Central Public Health Laboratory, Colindale. Several members joined in the discussion. A vote of thanks was moved by Dr. W. R. Lethem and carried by acclamation. (See this number page 168.)

The meeting then adjourned.

NORTHERN BRANCH

President: Dr. E. F. Dawson-Walker (M.O.H., Easington R.D.; M.O., Thorpe Isol. Hosp.).

Hon. Secretary: Dr. W. S. Walton, G.M. (M.O.H., Newcastle-on-Tyne C.B.).

A meeting of the Branch was held in the Board Room, Elswick Grange, Newcastle-upon-Tyne, on Friday, February 17th, 1950, at 5 p.m.

The President was in the chair and 22 members attended.

Durham C.C. Salaries of School Medical Officers. (Minute of previous meeting.)

The Honorary Secretary stated that he had written to the Executive Secretary expressing the Branch's concern at the position in Durham C.C., where the salaries of School Dentists had been increased without any corresponding improvement in that of the School Medical Officers. In reply, Mr. Elliston stated that the same situation had arisen in other places, but that there was no satisfactory solution until the new medical scales were agreed and operated. Dr. Walton reported for the information of members that the first meeting of the Medical Whitley Council had been held and that the next meeting was due on March 16th.

Dr. J. A. Charles. (Minute of previous meeting.) The Honorary Secretary reported that he had written to Dr. Charles conveying the congratulations of the Branch and that Dr. Charles had replied expressing his thanks.

Resolution from West of England Branch.

The Honorary Secretary reported receipt from the West of England Branch of a resolution reporting discontent at the inordinate delay in adjusting public health salaries.

It was agreed unanimously that this Branch support this resolution.

Training of Health Visitors. The Honorary Secretary submitted a letter from the Executive Secretary giving the general heads of agreement as to the future training of Health Visitors arrived at by the Liaison Committee and the Nursing Associations, and asking for any later views which Branches may wish to express.

After discussion it was agreed that the Branch reaffirm its opinion expressed in its communication to the Society on May 12th, 1949, that the Health Visitor's primary value is a result of nursing training and experience and that the new training would place too much stress on the social aspect of her work.

Annual Dinner. The Honorary Secretary reported that it was hoped to have as guest of honour the President of the Society, Dr. Maurice Williams, at the annual dinner on March 31st. He asked those members who intended to be present to let him know as early as possible, as accommodation this year was limited to 50 places. Dinner jackets would be worn.

Address by Dr. J. P. Child. After an introduction by the President, Dr. J. P. Child, Physician Superintendent, St. Nicholas Hospital, addressed the members on "The Mental Health Service." Drs. Hughes, Wilson, Peters, Grant, Dewell and Walker took part in the discussion which followed, and a vote of thanks proposed by Dr. Walton was carried with acclamation.

NORTH-WESTERN BRANCH

President: Dr. J. Yule (M.O.H., Stockport C.B.).

Hon. Secretary: Dr. J. S. G. Burnett (M.O.H., Preston C.B.).

An ordinary meeting of the Branch was held at Manchester on Friday, February 10th, and took the form of an inspection of various food preparation processes at the factory of Messrs. J. S. Hill & Co., Ltd., Levenshulme. Nine members were present.

A resolution of the West of England Branch regarding the delay in adjusting salaries and conditions of service was considered. In view of the active steps being taken by the public health representatives on the Public Health Committee of the British Medical Association it was decided that no useful purpose would be served by supporting this resolution.

It was resolved that "the strongest representations be made to the Council of the Society against the proposal that the Clerk of a Local Authority as Law Officer of an authority be the Chief Executive and Administrative Officer and in consequence have an overriding power on medical matters."

The members were then conducted round the factory by the Managing Director and members of his staff and an interesting 90 minutes were spent viewing and discussing various aspects of food handling and preparation. The President conveyed the thanks of the Branch to the firm for their kindness in arranging such an interesting tour and for their willingness to discuss the many problems arising in the preparation of food, and complimented them on the efficiency of their technical organisation.

The Annual Dinner of the Branch was held at the Grand Hotel, Manchester, on Friday, March 3rd, 1950, when 53 members and guests attended.

An ordinary meeting of the Branch was held in Manchester Town Hall on Friday, March 31st, when Sir John Charles, Chief Medical Officer-Elect of the Ministry of Health, was the principal guest. Discussion took place on the future trend of public health and strong emphasis was laid on difficulties arising in the working of the new Act. It was felt that in the process of effecting a great administrative change in the curative services of this country the preventive aspect of medicine had been almost completely ignored and as a result both preventive medicine and the public health service had suffered a catastrophic setback.

SCOTTISH BRANCH

President: Dr. E. Neil Reid (C.M.O.H., Stirlingshire).

Hon. Secretary: Dr. J. Riddell (C.M.O.H., Midlothian and Peebles).

A meeting of the Branch was held in the City Chambers, Edinburgh, on Saturday, February 25th, 1950. Twenty-seven members were present.

Report on Business of Branch Council Meeting of January 14th, 1950.

Annual Statistics of Queen's Institute of District Nursing. The Secretary reported that the Sub-committee had drafted a form of return in association with the Queen's Institute of District Nursing, which they hoped would prove satisfactory.

Nursery Nurses' Examination Board. The Secretary reported that as a result of the resignation of Dr. McMichael, who had been Chairman of this Board, Dr. A. G. Reekie, of Lanarkshire, was being proposed to take his place.

Statistical Returns—Form L.H.A. A/cs. 2 (1948-49). The Secretary explained that this was a financial return, linking details of work done in the Health Department with finance. He explained that the form is divided for the various services. It asks for very full information and the idea was to produce from it a cost analysis, *i.e.*, to compare the service of one local authority with another. The Secretary explained the fallacies and the danger that, if it were circulated, a local authority might draw wrong conclusions. It was reported that the form would go out this year without prejudice and we were asked to suggest what substitute in the way of a form would be adopted. When suggestions for such a form were ready, it was agreed that contact should be made with the Institute of Municipal Treasurers and the Association of County Treasurers.

Interdepartmental Committee on Meat Inspection. There was read a letter from the Secretary of this Committee asking whether or not we wished to give oral evidence in addition to that given by the parent Society. It was explained that the Committee were visiting Edinburgh on April 13th next. It was decided that we should give oral evidence and that we should be represented by Drs. Laidlaw, Clark, Reid, Nisbet and Kelman.

Geriatrics—Standing Medical Advisory Committee. In this connection there was a letter (which had been circulated) from the Secretaries of this Committee together with one from Dr. Harvey and an interesting discussion as to the exact responsibility of local authorities developed. Statements were made by Drs. Harvey, Horne, MacQueen. It was eventually agreed to appoint a Sub-committee as follows: Drs. Lockhart, Charlotte Douglas, Fyfe, Wattie, Rae, Laidlaw, Harvey, Leask, Monro, Reekie, with Dr. MacQueen attending.

Tuberculosis Society of Scotland—Invitation to Centenary Meeting and Dinner. It was reported that the Tuberculosis Society of Scotland wished to honour our Society by inviting a guest to their centenary meeting and dinner, which was to be held on March 31st and April 1st, 1950. It was unanimously agreed that the Chairman be sent, with the Secretary to act as deputy.

Lothians and Peebles Local Medical Committee. To meet a request by the above for a representative, it was agreed that Dr. Riddell should represent the Branch on this Committee for the next three years.

Milton Antiseptic Limited. There was read a letter from Messrs. Milton Antiseptic Limited, offering the services of a lecturer on Hygiene and Infant Welfare. It was agreed not to accept the offer.

County Councils' Association. There was read a letter from Dr. Adam regarding the policy which should be adopted by the representatives of the Society who were advisers to the Association of County Councils. After a very full discussion it was agreed that the *status quo* should remain but that when advice on large general questions was asked, a note of such questions should be sent to the Secretary of the Society as soon as possible for inclusion in the agenda of the next meeting. This would apply likewise to the Counties of Cities Association.

Status of Sanitary Inspectors. This referred to a statement being prepared by the Department of Health for Scotland on the relationship of the Medical Officer of Health to the Sanitary Inspector. The Department's suggestions were discussed very fully. It was agreed to improve the text, with the word "executive" added before "head" in line five, and that meantime the proviso be not accepted, but that the Council should consider an alternative form of wording which might satisfy both the Branch and the Department of Health.

Training of Health Visitors. There was read a letter from the Executive Secretary of the Society and from Dr. Wattie, of the Child Health Group, outlining suggestions on the training of Health Visitors. It was seen that the latter had not departed from their previous memorandum which had the approval of the Branch.

North of Ireland Branch—Joint Meeting. The Secretary read a letter from the Vice-President of the North of Ireland Branch regarding an invitation for a joint meeting in Belfast, and it was agreed that this take place on a Saturday, early in May. Information had been received that Dr. Allison, Director of Laboratory Services, Northern Ireland, was to read a paper to the joint meeting.

Grading of Medical Officers of Health who are Medical Superintendents of Isolation Hospitals. A letter was read from the Secretary, Yorkshire Branch, regarding the above. It was agreed to circularise all Scottish Medical Officers of Health to find out the position in Scotland and thereafter pass on the information.

Salaries and Conditions of Service. A resolution was read from the West of England Branch deploring the tardiness with which the salaries of Medical Officers of Health had been dealt. Some

discussion took place on this but it was felt that as the Whitley machinery was now in operation, the letter should be left to lie on the table.

Anton House, Broughty Ferry. A letter was read inviting members of the Branch to visit the above home for severely physically handicapped young women. The contents were noted.

The meeting terminated at 12.50 p.m.

SOUTHERN BRANCH

President: Dr. A. A. Lisney (C.M.O., Dorset).
Hon. Secretary: Dr. E. J. Gordon Wallace (M.O.H., Weymouth).

A meeting of the Southern Branch was held in the Health Centre, King's Park Road, Southampton, on Friday, February 24th, 1950. Twenty-six members and 12 visitors attended.

Arising from the minutes, Dr. Chesney reported that his letter with the suggestion on the possibility of forming a College of Preventive Medicine has been considered by the Council of the Society and referred to the General Purposes Committee.

A discussion on "Poliomyelitis and Tonsillectomy" was opened by Dr. J. Alison Glover, C.B.E., F.R.C.P., Ministry of Health, and Mr. Cowper Tamplin, F.R.C.S., D.L.O., E.N.T. Surgeon to the Portsmouth Hospital Group, whose addresses were published in the May issue of *Public Health*.

Eleven speakers took part in the subsequent discussion, and Dr. Alison Glover and Mr. Cowper Tamplin were accorded a most cordial vote of thanks on the proposition of the President.

Dinner to Council of Society.—Dr. H. C. Maurice Williams, President of the Society, said that the Council of the Society would be meeting in Southampton on July 7th, 1950.

It was unanimously agreed that the Southern Branch should entertain the Council of the Society to dinner on the evening of July 7th, 1950, and Dr. Maurice Williams, Dr. A. A. Lisney and Dr. E. J. Gordon Wallace were authorised to make the necessary arrangements.

Discussion of Clinical Cases of Interest

Dr. McLachlan (1) gave further details of the case of staphylococcal meningitis which he had reported to the last meeting of the Branch. This child had been transferred to the Neuro-surgery Department of the Atkinson Morley Hospital under Mr. W. McKissock, and a report had now been received stating that:—

> "Skull *x*-rays were normal except for some mucosal thickening of the left frontal sinus. Ventriculography showed backward displacement of the anterior horn of the left ventricle but with no shift to the opposite side.
>
> "Her general condition remains good, and it is our intention to repeat the ventriculogram, and if the deformity persists to explore through a burrhole for a cerebral abscess."

(2) Described three cases of typhoid fever from one family in which the original diagnosis had been as follows: (*a*) Broncho-pneumonia, (*b*) appendicitis, (*c*) feverish cold. Organisms had been found in all three cases but had not yet been Phage typed. An uncle and aunt of this family had come off the s.s. *Moltan* in November, 1949.

(*Note.*—Dr. McLachlan will be reporting further on these cases to the next meeting of the Branch.)

Dr. Godber (whom the President heartily congratulated on his recent promotion) said that there appeared to be an unusually high number of deaths from influenza at the present time. Virus B had been isolated in one school outbreak; no Virus A had so far been isolated and it was not thought that there was much possibility of a serious epidemic this year.

Dr. Chesney described a case of a doctor aged 24 years who had been in hospital for four days with (?) Bornholm's Disease, had apparently recovered, played a game of squash, and died within 24 hours—poliomyelitis—bulbar paresis.

Dr. Sinclair described a fatal case of acute virus pneumonia.

Other Business

(1) Dr. A. E. Druitt expressed his grateful appreciation to the Southern Branch for having put his name forward for Honorary Life Membership.

(2) On the proposition of Dr. R. M. Warren, it was unanimously agreed that a framed photograph of Dr. H. C. Maurice Williams, President of the Society of Medical Officers of Health, be presented to the Society by the Southern Branch.

WELSH BRANCH

President: Dr. Kathleen Davies (Divl. M.O., Mid-Glamorgan).
Hon. Secretary: Dr. Mary Lennox (M.O.H., Barry M.B.).

A meeting of the Branch Council, at which nine members were present, was held at the Institute of Preventive Medicine, Cardiff, on February 10th, 1950. It was immediately followed by a meeting of the Branch which was attended by the President and 17 members.

" Rehabilitation of Tubercular Patients "

The President introduced Prof. F. G. R. Heaf (Professor of Tuberculosis, Welsh National School of Medicine), who spoke on the above subject. He stressed that a tuberculosis service without rehabilitation was not complete, and distinguished between diversional therapy which should not have an economic value, and rehabilitation which should. He deprecated the division of rehabilitation between Regional Boards and Local Health Authorities as tuberculosis was a national problem and not just a chest disease.

The problem was a difficult one and outdoor work was not the answer—indoor work with good pay was far better.

Village settlements did much but he thought that limited-stay schemes were better in the long run than permanent settlement, as very few patients would accept the latter. He felt that the Disabled Persons Employment Act would be very helpful as it enabled the establishment of the "Remploy" factories and the Ministry of Labour training schemes. Patients should do three to four hours' work daily. Experience of sheltered workshops showed that sickness rate was high. About 15% healthy workers were necessary in all schemes to fill key positions.

All these schemes must be subsidised either through pensions, National Assistance or Local Health Authorities to ensure that the worker obtained an economic wage.

Prof. Heaf pointed out the difficulties inherent in tuberculosis rehabilitation and suggested several lines of research, etc., which would help to improve the situation, *e.g.*:—

(i) Scientific means of assessing individual ability for work.

(ii) Discharge reports from sanatoria should include details of excercise tolerance, vocational ability, etc.

(iii) Comparisons of results obtained by equal financial outlay in the home and in settlements.

After Prof. Heaf had answered several questions, Dr. J. Greenwood Wilson, in proposing a vote of thanks, welcomed Professor Heaf to Wales and expressed the pleasure of the members at their great privilege in hearing his address. The vote of thanks was seconded by Dr. R. T. Bevan.

A meeting of the Branch was held at the Institute of Preventive Medicine, Cardiff, on March 10th, 1950. The President and 20 members were present.

It was agreed unanimously that Dr. G. McKim Thomas and Dr. Amy Jagger be nominated for the Cardiff British Medical Guild Committee and Drs. H. R. Stubbins and G. E. Donovan for the Swansea area.

After the business of the meeting, the President introduced Prof. Grundy, Mansel Talbot Professor of Preventive Medicine, University of Wales. Prof. Grundy chose as his subject "New Paths in Public Health." He outlined the changes which had recently taken place due to the National Health Service, and deplored the difficulties in recruiting new members of the service. He felt that the modern medical officer had concentrated too much on administration and had perhaps neglected his true function—that of research into and correlation of existing local data. He urged the inauguration of local surveys which should be linked up with similar surveys in all parts of the country and suggested several lines of morbidity and mortality research which could be commenced immediately.

He then outlined recent work which had been carried out on these lines at Luton on morbidity rates and social conditions in infants in that area, when it was found that although infant mortality had a social gradient this did not apply to infant morbidity.

The complete address is to be published in the July issue of *Public Health*.

Prof. Picken, in proposing a vote of thanks, welcomed Prof. Grundy to Wales, and said that he had put an admirable case in an admirable way.

The vote of thanks was seconded by Dr. Colston Williams.

Annual Dinner

The Annual Dinner of the Welsh Branch was held at the Royal Hotel, Cardiff, on March 23rd. The President, Dr. Kathleen Davies, and 40 members and guests were present. The guests of honour were Dr. P. T. Bray and Dr. G. A. Hodgson. "The Society" was proposed by Dr. G. A. Hodgson and Dr. J. Greenwood Wilson responded. Dr. R. T. Bevan proposed the health of the guests, and Dr. P. T. Bray responded.

The evening was much enjoyed by all those present.

NORTH-WESTERN M. & C.W. AND S.H.S. GROUPS

President: Dr. J. E. Spence (M.O.H., Eccles M.B.; Divl. M.O., Lancs.).
Hon. Secretary: Dr. E. M. Jenkins (Chief A.S.M.O., Manchester M.B.).

A general meeting held in the Public Health Committee room of Manchester Town Hall, on Friday, February 3rd, 1950, at 5 p.m. Eighteen members were present.

The President introduced the speaker, Miss Ashworth, Senior Speech Therapist to the Manchester Education Committee. Miss Ashworth then read a paper interspersed with comments on disorders of speech. She classified the main types into groups, including stammerers, dyslalias, and defects due to cleft palate, dental irregularities, and cerebral palsies. She illustrated her discourse with many interesting case histories, and explained the methods of treatment and the psychological aspect of many cases.

A lively discussion, opened by the President, followed, which included the question of group therapy, the co-operation of teachers, and the possibility of their undertaking some treatment.

A vote of thanks, which was unanimously supported, was proposed by the Secretary, who expressed his responsibility for Miss Ashworth's presence.

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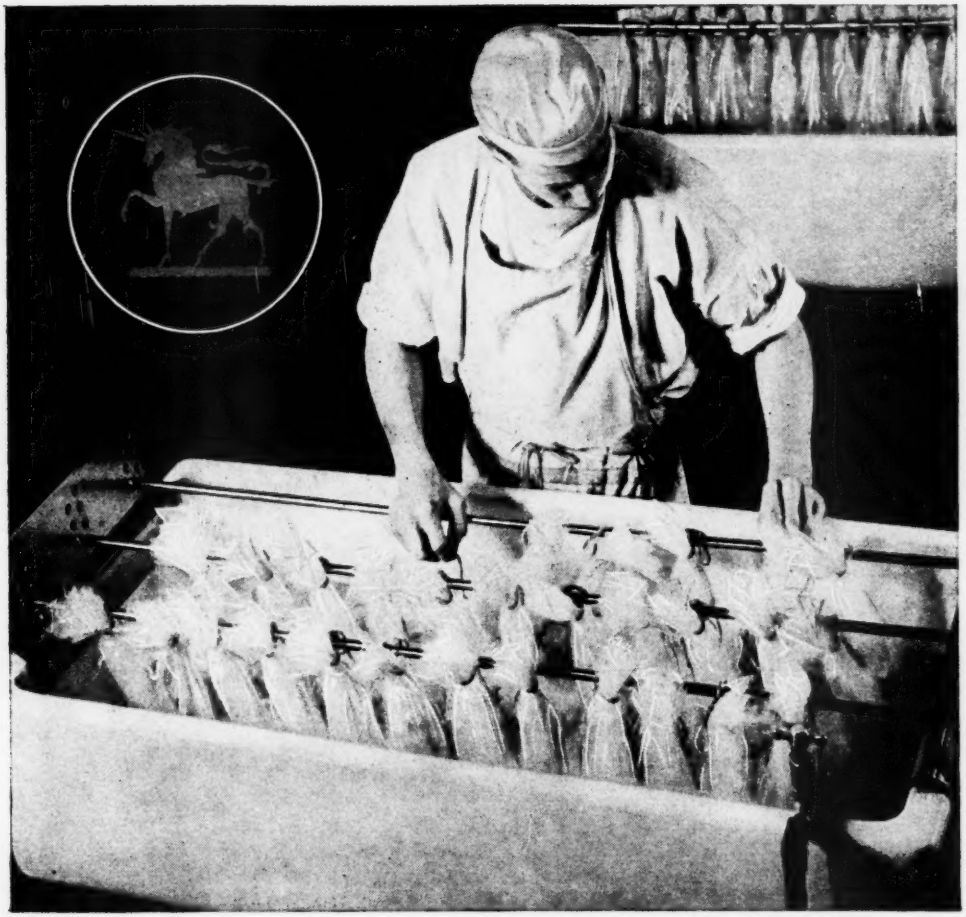

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